HP ProLiant DL165 G7 Server

Maintenance and Service Guide

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Contents

Customer self repair

HP products are designed with many Customer Self Repair (CSR) parts to minimize repair time and allow for greater flexibility in performing defective parts replacement. If during the diagnosis period HP (or HP service providers or service partners) identifies that the repair can be accomplished by the use of a CSR part, HP will ship that part directly to you for replacement. There are two categories of CSR parts:

- **Mandatory**—Parts for which customer self repair is mandatory. If you request HP to replace these parts, you will be charged for the travel and labor costs of this service.
- **Optional**—Parts for which customer self repair is optional. These parts are also designed for customer self repair. If, however, you require that HP replace them for you, there may or may not be additional charges, depending on the type of warranty service designated for your product.

NOTE: Some HP parts are not designed for customer self repair. In order to satisfy the customer warranty, HP requires that an authorized service provider replace the part. These parts are identified as "No" in the Illustrated Parts Catalog.

Based on availability and where geography permits, CSR parts will be shipped for next business day delivery. Same day or four-hour delivery may be offered at an additional charge where geography permits. If assistance is required, you can call the HP Technical Support Center and a technician will help you over the telephone. HP specifies in the materials shipped with a replacement CSR part whether a defective part must be returned to HP. In cases where it is required to return the defective part to HP, you must ship the defective part back to HP within a defined period of time, normally five (5) business days. The defective part must be returned with the associated documentation in the provided shipping material. Failure to return the defective part may result in HP billing you for the replacement. With a customer self repair, HP will pay all shipping and part return costs and determine the courier/carrier to be used.

For more information about HP's Customer Self Repair program, contact your local service provider. For the North American program, refer to the HP website (**http://www.hp.com/go/selfrepair**).

Parts only warranty service

Your HP Limited Warranty may include a parts only warranty service. Under the terms of parts only warranty service, HP will provide replacement parts free of charge.

For parts only warranty service, CSR part replacement is mandatory. If you request HP to replace these parts, you will be charged for the travel and labor costs of this service.

Réparation par le client (CSR)

Les produits HP comportent de nombreuses pièces CSR (Customer Self Repair = réparation par le client) afin de minimiser les délais de réparation et faciliter le remplacement des pièces défectueuses. Si pendant la période de diagnostic, HP (ou ses partenaires ou mainteneurs agréés) détermine que la réparation peut être effectuée à l'aide d'une pièce CSR, HP vous l'envoie directement. Il existe deux catégories de pièces CSR:

- **Obligatoire**—Pièces pour lesquelles la réparation par le client est obligatoire. Si vous demandez à HP de remplacer ces pièces, les coûts de déplacement et main d'œuvre du service vous seront facturés.
- **Facultatif**—Pièces pour lesquelles la réparation par le client est facultative. Ces pièces sont également conçues pour permettre au client d'effectuer lui-même la réparation. Toutefois, si vous demandez à HP de remplacer ces pièces, l'intervention peut ou non vous être facturée, selon le type de garantie applicable à votre produit.

REMARQUE: Certaines pièces HP ne sont pas conçues pour permettre au client d'effectuer lui-même la réparation. Pour que la garantie puisse s'appliquer, HP exige que le remplacement de la pièce soit effectué par un Mainteneur Agréé. Ces pièces sont identifiées par la mention "Non" dans le Catalogue illustré.

Les pièces CSR sont livrées le jour ouvré suivant, dans la limite des stocks disponibles et selon votre situation géographique. Si votre situation géographique le permet et que vous demandez une livraison le jour même ou dans les 4 heures, celle-ci vous sera facturée. Pour bénéficier d'une assistance téléphonique, appelez le Centre d'assistance technique HP. Dans les documents envoyés avec la pièce de rechange CSR, HP précise s'il est nécessaire de lui retourner la pièce défectueuse. Si c'est le cas, vous devez le faire dans le délai indiqué, généralement cinq (5) jours ouvrés. La pièce et sa documentation doivent être retournées dans l'emballage fourni. Si vous ne retournez pas la pièce défectueuse, HP se réserve le droit de vous facturer les coûts de remplacement. Dans le cas d'une pièce CSR, HP supporte l'ensemble des frais d'expédition et de retour, et détermine la société de courses ou le transporteur à utiliser.

Pour plus d'informations sur le programme CSR de HP, contactez votre Mainteneur Agrée local. Pour plus d'informations sur ce programme en Amérique du Nord, consultez le site Web HP (**http://www.hp.com/go/selfrepair**).

Service de garantie "pièces seules"

Votre garantie limitée HP peut inclure un service de garantie "pièces seules". Dans ce cas, les pièces de rechange fournies par HP ne sont pas facturées.

Dans le cadre de ce service, la réparation des pièces CSR par le client est obligatoire. Si vous demandez à HP de remplacer ces pièces, les coûts de déplacement et main d'œuvre du service vous seront facturés.

Riparazione da parte del cliente

Per abbreviare i tempi di riparazione e garantire una maggiore flessibilità nella sostituzione di parti difettose, i prodotti HP sono realizzati con numerosi componenti che possono essere riparati direttamente dal cliente (CSR, Customer Self Repair). Se in fase di diagnostica HP (o un centro di servizi o di assistenza HP) identifica il guasto come riparabile mediante un ricambio CSR, HP lo spedirà direttamente al cliente per la sostituzione. Vi sono due categorie di parti CSR:

- **Obbligatorie**—Parti che devono essere necessariamente riparate dal cliente. Se il cliente ne affida la riparazione ad HP, deve sostenere le spese di spedizione e di manodopera per il servizio.
- **Opzionali**—Parti la cui riparazione da parte del cliente è facoltativa. Si tratta comunque di componenti progettati per questo scopo. Se tuttavia il cliente ne richiede la sostituzione ad HP, potrebbe dover sostenere spese addizionali a seconda del tipo di garanzia previsto per il prodotto.

NOTA: alcuni componenti HP non sono progettati per la riparazione da parte del cliente. Per rispettare la garanzia, HP richiede che queste parti siano sostituite da un centro di assistenza autorizzato. Tali parti sono identificate da un "No" nel Catalogo illustrato dei componenti.

In base alla disponibilità e alla località geografica, le parti CSR vengono spedite con consegna entro il giorno lavorativo seguente. La consegna nel giorno stesso o entro quattro ore è offerta con un supplemento di costo solo in alcune zone. In caso di necessità si può richiedere l'assistenza telefonica di un addetto del centro di supporto tecnico HP. Nel materiale fornito con una parte di ricambio CSR, HP specifica se il cliente deve restituire dei componenti. Qualora sia richiesta la resa ad HP del componente difettoso, lo si deve spedire ad HP entro un determinato periodo di tempo, generalmente cinque (5) giorni lavorativi. Il componente difettoso deve essere restituito con la documentazione associata nell'imballo di spedizione fornito. La mancata restituzione del componente può comportare la fatturazione del ricambio da parte di HP. Nel caso di riparazione da parte del cliente, HP sostiene tutte le spese di spedizione e resa e sceglie il corriere/vettore da utilizzare.

Per ulteriori informazioni sul programma CSR di HP contattare il centro di assistenza di zona. Per il programma in Nord America fare riferimento al sito Web HP (**http://www.hp.com/go/selfrepair**).

Servizio di garanzia per i soli componenti

La garanzia limitata HP può includere un servizio di garanzia per i soli componenti. Nei termini di garanzia del servizio per i soli componenti, HP fornirà gratuitamente le parti di ricambio.

Per il servizio di garanzia per i soli componenti è obbligatoria la formula CSR che prevede la riparazione da parte del cliente. Se il cliente invece richiede la sostituzione ad HP, dovrà sostenere le spese di spedizione e di manodopera per il servizio.

Customer self repair

HP Produkte enthalten viele CSR-Teile (Customer Self Repair), um Reparaturzeiten zu minimieren und höhere Flexibilität beim Austausch defekter Bauteile zu ermöglichen. Wenn HP (oder ein HP Servicepartner) bei der Diagnose feststellt, dass das Produkt mithilfe eines CSR-Teils repariert werden kann, sendet Ihnen HP dieses Bauteil zum Austausch direkt zu. CSR-Teile werden in zwei Kategorien unterteilt:

- **Zwingend**—Teile, für die das Customer Self Repair-Verfahren zwingend vorgegeben ist. Wenn Sie den Austausch dieser Teile von HP vornehmen lassen, werden Ihnen die Anfahrt- und Arbeitskosten für diesen Service berechnet.
- **Optional**—Teile, für die das Customer Self Repair-Verfahren optional ist. Diese Teile sind auch für Customer Self Repair ausgelegt. Wenn Sie jedoch den Austausch dieser Teile von HP vornehmen lassen möchten, können bei diesem Service je nach den für Ihr Produkt vorgesehenen Garantiebedingungen zusätzliche Kosten anfallen.

HINWEIS: Einige Teile sind nicht für Customer Self Repair ausgelegt. Um den Garantieanspruch des Kunden zu erfüllen, muss das Teil von einem HP Servicepartner ersetzt werden. Im illustrierten Teilekatalog sind diese Teile mit „No" bzw. „Nein" gekennzeichnet.

CSR-Teile werden abhängig von der Verfügbarkeit und vom Lieferziel am folgenden Geschäftstag geliefert. Für bestimmte Standorte ist eine Lieferung am selben Tag oder innerhalb von vier Stunden gegen einen Aufpreis verfügbar. Wenn Sie Hilfe benötigen, können Sie das HP technische Support Center anrufen und sich von einem Mitarbeiter per Telefon helfen lassen. Den Materialien, die mit einem CSR-Ersatzteil geliefert werden, können Sie entnehmen, ob das defekte Teil an HP zurückgeschickt werden muss. Wenn es erforderlich ist, das defekte Teil an HP zurückzuschicken, müssen Sie dies innerhalb eines vorgegebenen Zeitraums tun, in der Regel innerhalb von fünf (5) Geschäftstagen. Das defekte Teil muss mit der zugehörigen Dokumentation in der Verpackung zurückgeschickt werden, die im Lieferumfang enthalten ist. Wenn Sie das defekte Teil nicht zurückschicken, kann HP Ihnen das Ersatzteil in Rechnung stellen. Im Falle von Customer Self Repair kommt HP für alle Kosten für die Lieferung und Rücksendung auf und bestimmt den Kurier-/Frachtdienst.

Weitere Informationen über das HP Customer Self Repair Programm erhalten Sie von Ihrem Servicepartner vor Ort. Informationen über das CSR-Programm in Nordamerika finden Sie auf der HP Website unter (http://www.hp.com/go/selfrepair).

Parts-only warranty service (Garantieservice ausschließlich für Teile)

Ihre HP Garantie umfasst möglicherweise einen Parts-only Warranty Service (Garantieservice ausschließlich für Teile). Gemäß den Bestimmungen des Parts-only Warranty Service stellt HP Ersatzteile kostenlos zur Verfügung.

Für den Parts-only Warranty Service ist das CSR-Verfahren zwingend vorgegeben. Wenn Sie den Austausch dieser Teile von HP vornehmen lassen, werden Ihnen die Anfahrt- und Arbeitskosten für diesen Service berechnet

Reparaciones del propio cliente

Los productos de HP incluyen muchos componentes que el propio usuario puede reemplazar (*Customer Self Repair*, CSR) para minimizar el tiempo de reparación y ofrecer una mayor flexibilidad a la hora de realizar sustituciones de componentes defectuosos. Si, durante la fase de diagnóstico, HP (o los proveedores o socios de servicio de HP) identifica que una reparación puede llevarse a cabo mediante el uso de un componente CSR, HP le enviará dicho componente directamente para que realice su sustitución. Los componentes CSR se clasifican en dos categorías:

- **Obligatorio**—componentes para los que la reparación por parte del usuario es obligatoria. Si solicita a HP que realice la sustitución de estos componentes, tendrá que hacerse cargo de los gastos de desplazamiento y de mano de obra de dicho servicio.
- **Opcional**—componentes para los que la reparación por parte del usuario es opcional. Estos componentes también están diseñados para que puedan ser reparados por el usuario. Sin embargo, si precisa que HP realice su sustitución, puede o no conllevar costes adicionales, dependiendo del tipo de servicio de garantía correspondiente al producto.

NOTA: Algunos componentes no están diseñados para que puedan ser reparados por el usuario. Para que el usuario haga valer su garantía, HP pone como condición que un proveedor de servicios autorizado realice la sustitución de estos componentes. Dichos componentes se identifican con la palabra "No" en el catálogo ilustrado de componentes.

Según la disponibilidad y la situación geográfica, los componentes CSR se enviarán para que lleguen a su destino al siguiente día laborable. Si la situación geográfica lo permite, se puede solicitar la entrega en el mismo día o en cuatro horas con un coste adicional. Si precisa asistencia técnica, puede llamar al Centro de asistencia técnica de HP y recibirá ayuda telefónica por parte de un técnico. Con el envío de materiales para la sustitución de componentes CSR, HP especificará si los componentes defectuosos deberán devolverse a HP. En aquellos casos en los que sea necesario devolver algún componente a HP, deberá hacerlo en el periodo de tiempo especificado, normalmente cinco días laborables. Los componentes defectuosos deberán devolverse con toda la documentación relacionada y con el embalaje de envío. Si no enviara el componente defectuoso requerido, HP podrá cobrarle por el de sustitución. En el caso de todas sustituciones que lleve a cabo el cliente, HP se hará cargo de todos los gastos de envío y devolución de componentes y escogerá la empresa de transporte que se utilice para dicho servicio.

Para obtener más información acerca del programa de Reparaciones del propio cliente de HP, póngase en contacto con su proveedor de servicios local. Si está interesado en el programa para Norteamérica, visite la página web de HP siguiente (**http://www.hp.com/go/selfrepair**).

Servicio de garantía exclusivo de componentes

La garantía limitada de HP puede que incluya un servicio de garantía exclusivo de componentes. Según las condiciones de este servicio exclusivo de componentes, HP le facilitará los componentes de repuesto sin cargo adicional alguno.

Para este servicio de garantía exclusivo de componentes, es obligatoria la sustitución de componentes por parte del usuario (CSR). Si solicita a HP que realice la sustitución de estos componentes, tendrá que hacerse cargo de los gastos de desplazamiento y de mano de obra de dicho servicio.

Customer self repair

Veel onderdelen in HP producten zijn door de klant zelf te repareren, waardoor de reparatieduur tot een minimum beperkt kan blijven en de flexibiliteit in het vervangen van defecte onderdelen groter is. Deze onderdelen worden CSR-onderdelen (Customer Self Repair) genoemd. Als HP (of een HP Service Partner) bij de diagnose vaststelt dat de reparatie kan worden uitgevoerd met een CSR-onderdeel, verzendt HP dat onderdeel rechtstreeks naar u, zodat u het defecte onderdeel daarmee kunt vervangen. Er zijn twee categorieën CSR-onderdelen:

- **Verplicht**—Onderdelen waarvoor reparatie door de klant verplicht is. Als u HP verzoekt deze onderdelen voor u te vervangen, worden u voor deze service reiskosten en arbeidsloon in rekening gebracht.
- **Optioneel**—Onderdelen waarvoor reparatie door de klant optioneel is. Ook deze onderdelen zijn ontworpen voor reparatie door de klant. Als u echter HP verzoekt deze onderdelen voor u te vervangen, kunnen daarvoor extra kosten in rekening worden gebracht, afhankelijk van het type garantieservice voor het product.

OPMERKING: Sommige HP onderdelen zijn niet ontwikkeld voor reparatie door de klant. In verband met de garantievoorwaarden moet het onderdeel door een geautoriseerde Service Partner worden vervangen. Deze onderdelen worden in de geïllustreerde onderdelencatalogus aangemerkt met "Nee".

Afhankelijk van de leverbaarheid en de locatie worden CSR-onderdelen verzonden voor levering op de eerstvolgende werkdag. Levering op dezelfde dag of binnen vier uur kan tegen meerkosten worden aangeboden, indien dit mogelijk is gezien de locatie. Indien assistentie gewenst is, belt u een HP Service Partner om via de telefoon technische ondersteuning te ontvangen. HP vermeldt in de documentatie bij het vervangende CSR-onderdeel of het defecte onderdeel aan HP moet worden geretourneerd. Als het defecte onderdeel aan HP moet worden teruggezonden, moet u het defecte onderdeel binnen een bepaalde periode, gewoonlijk vijf (5) werkdagen, retourneren aan HP. Het defecte onderdeel moet met de bijbehorende documentatie worden geretourneerd in het meegeleverde verpakkingsmateriaal. Als u het defecte onderdeel niet terugzendt, kan HP u voor het vervangende onderdeel kosten in rekening brengen. Bij reparatie door de klant betaalt HP alle verzendkosten voor het vervangende en geretourneerde onderdeel en kiest HP zelf welke koerier/transportonderneming hiervoor wordt gebruikt.

Neem contact op met een Service Partner voor meer informatie over het Customer Self Repair programma van HP. Informatie over Service Partners vindt u op de HP website (**http://www.hp.com/go/selfrepair**).

Garantieservice "Parts Only"

Het is mogelijk dat de HP garantie alleen de garantieservice "Parts Only" omvat. Volgens de bepalingen van de Parts Only garantieservice zal HP kosteloos vervangende onderdelen ter beschikking stellen.

Voor de Parts Only garantieservice is vervanging door CSR-onderdelen verplicht. Als u HP verzoekt deze onderdelen voor u te vervangen, worden u voor deze service reiskosten en arbeidsloon in rekening gebracht.

Reparo feito pelo cliente

Os produtos da HP são projetados com muitas peças para reparo feito pelo cliente (CSR) de modo a minimizar o tempo de reparo e permitir maior flexibilidade na substituição de peças com defeito. Se, durante o período de diagnóstico, a HP (ou fornecedores/parceiros de serviço da HP) concluir que o reparo pode ser efetuado pelo uso de uma peça CSR, a peça de reposição será enviada diretamente ao cliente. Existem duas categorias de peças CSR:

- **Obrigatória**—Peças cujo reparo feito pelo cliente é obrigatório. Se desejar que a HP substitua essas peças, serão cobradas as despesas de transporte e mão-de-obra do serviço.
- **Opcional**—Peças cujo reparo feito pelo cliente é opcional. Essas peças também são projetadas para o reparo feito pelo cliente. No entanto, se desejar que a HP as substitua, pode haver ou não a cobrança de taxa adicional, dependendo do tipo de serviço de garantia destinado ao produto.

OBSERVAÇÃO: Algumas peças da HP não são projetadas para o reparo feito pelo cliente. A fim de cumprir a garantia do cliente, a HP exige que um técnico autorizado substitua a peça. Essas peças estão identificadas com a marca "No" (Não), no catálogo de peças ilustrado.

Conforme a disponibilidade e o local geográfico, as peças CSR serão enviadas no primeiro dia útil após o pedido. Onde as condições geográficas permitirem, a entrega no mesmo dia ou em quatro horas pode ser feita mediante uma taxa adicional. Se precisar de auxílio, entre em contato com o Centro de suporte técnico da HP para que um técnico o ajude por telefone. A HP especifica nos materiais fornecidos com a peça CSR de reposição se a peça com defeito deve ser devolvida à HP. Nos casos em que isso for necessário, é preciso enviar a peça com defeito à HP dentro do período determinado, normalmente cinco (5) dias úteis. A peça com defeito deve ser enviada com a documentação correspondente no material de transporte fornecido. Caso não o faça, a HP poderá cobrar a reposição. Para as peças de reparo feito pelo cliente, a HP paga todas as despesas de transporte e de devolução da peça e determina a transportadora/serviço postal a ser utilizado.

Para obter mais informações sobre o programa de reparo feito pelo cliente da HP, entre em contato com o fornecedor de serviços local. Para o programa norte-americano, visite o site da HP (**http://www.hp.com/go/selfrepair**).

Serviço de garantia apenas para peças

A garantia limitada da HP pode incluir um serviço de garantia apenas para peças. Segundo os termos do serviço de garantia apenas para peças, a HP fornece as peças de reposição sem cobrar nenhuma taxa.

No caso desse serviço, a substituição de peças CSR é obrigatória. Se desejar que a HP substitua essas peças, serão cobradas as despesas de transporte e mão-de-obra do serviço.

顧客自己修理保証サービス

修理時間を短縮し、故障部品の交換における高い柔軟性を確保するために、HP製品には多数の顧客自己修理（CSR）部品があります。診断の際に、CSR部品を使用すれば修理ができるとHP（HPまたはHP正規保守代理店）が判断した場合、HPはその部品を直接、お客様に発送し、お客様に交換していただきます。CSR部品には以下の2通りがあります。

- 必須 - 顧客自己修理が必須の部品。当該部品について、もしもお客様がHPに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費がお客様に請求されます。
- 任意 - 顧客自己修理が任意である部品。この部品も顧客自己修理用です。当該部品について、もしもお客様がHPに交換作業を依頼される場合には、お買い上げの製品に適用される保証サービス内容の範囲内においては、別途費用を負担していただくことなく保証サービスを受けることができます。

注： HP製品の一部の部品は、顧客自己修理用ではありません。製品の保証を継続するためには、HPまたはHP正規保守代理店による交換作業が必須となります。部品カタログには、当該部品が顧客自己修理除外品である旨が記載されています。

部品供給が可能な場合、地域によっては、CSR部品を翌営業日に届くように発送します。また、地域によっては、追加費用を負担いただくことにより同日または4時間以内に届くように発送することも可能な場合があります。サポートが必要なときは、HPの修理受付窓口に電話していただければ、技術者が電話でアドバイスします。交換用のCSR部品または同梱物には、故障部品をHPに返送する必要があるかどうかが表示されています。故障部品をHPに返送する必要がある場合は、指定期限内（通常は5営業日以内）に故障部品をHPに返送してください。故障部品を返送する場合は、届いた時の梱包箱に関連書類とともに入れてください。故障部品を返送しない場合、HPから部品費用が請求されます。顧客自己修理の際には、HPは送料および部品返送費を全額負担し、使用する宅配便会社や運送会社を指定します。

部品のみ保証サービス

HP保証サービスには、部品のみ保証サービスが適用される場合があります。このサービスでは、交換部品は無償で提供されます。

部品のみ保証サービスにおいては、CSR部品をお客様により交換作業していただくことが必須となります。当該部品について、もしもお客様がHPに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費はお客様の負担となります。

客户自行维修

HP 产品提供许多客户自行维修 (CSR) 部件，以尽可能缩短维修时间和在更换缺陷部件方面提供更大的灵活性。如果在诊断期间 HP（或 HP 服务提供商或服务合作伙伴）确定可以通过使用 CSR 部件完成维修，HP 将直接把该部件发送给您进行更换。有两类 CSR 部件：

- **强制性的** — 要求客户必须自行维修的部件。如果您请求 HP 更换这些部件，则必须为该服务支付差旅费和人工费用。
- **可选的** — 客户可以选择是否自行维修的部件。这些部件也是为客户自行维修设计的。不过，如果您要求 HP 为您更换这些部件，则根据为您的产品指定的保修服务类型，HP 可能收取或不再收取任何附加费用。

注：某些 HP 部件的设计并未考虑客户自行维修。为了满足客户保修的需要，HP 要求授权服务提供商更换相关部件。这些部件在部件图解目录中标记为“否”。

CSR 部件将在下一个工作日发运（取决于备货情况和允许的地理范围）。在允许的地理范围内，可在当天或四小时内发运，但要收取额外费用。如果需要帮助，您可以致电 HP 技术支持中心，将会有技术人员通过电话为您提供帮助。HP 会在随更换的 CSR 部件发运的材料中指明是否必须将有缺陷的部件返还给 HP。如果要求您将有缺陷的部件返还给 HP，那么您必须在规定期限内（通常是五 (5) 个工作日）将缺陷部件发给 HP。有缺陷的部件必须随所提供的发运材料中的相关文件一起返还。如果未能送还有缺陷的部件，HP 可能会要求您支付更换费用。客户自行维修时，HP 将承担所有相关运输和部件返回费用，并指定快递商/承运商。

有关 HP 客户自行维修计划的详细信息，请与您当地的服务提供商联系。有关北美地区的计划，请访问 HP 网站 (http://www.hp.com/go/selfrepair)。

仅部件保修服务

您的 HP 有限保修服务可能涉及仅部件保修服务。根据仅部件保修服务条款的规定，HP 将免费提供更换的部件。

仅部件保修服务要求进行 CSR 部件更换。如果您请求 HP 更换这些部件，则必须为该服务支付差旅费和人工费用。

客戶自行維修

HP 產品設計了許多「客戶自行維修」(CSR) 的零件以減少維修時間，並且使得更換瑕疵零件時能有更大的彈性。如果在診斷期間 HP（或 HP 服務供應商或維修夥伴）辨認出此項維修工作可以藉由使用 CSR 零件來完成，則 HP 將直接寄送該零件給您作更換。CSR 零件分為兩種類別：

- **強制的** — 客戶自行維修所使用的零件是強制性的。如果您要求 HP 更換這些零件，HP 將會向您收取此服務所需的外出費用與勞動成本。
- **選購的** — 客戶自行維修所使用的零件是選購的。這些零件也設計用於客戶自行維修之用。不過，如果您要求 HP 為您更換，則可能需要也可能不需要負擔額外的費用，端視針對此產品指定的保固服務類型而定。

備註：某些 HP 零件沒有消費者可自行維修的設計。為符合客戶保固，HP 需要授權的服務供應商更換零件。這些零件在圖示的零件目錄中，被標示為「否」。

基於材料取得及環境允許的情況下，CSR 零件將於下一個工作日以快遞寄送。在環境的允許下當天或四小時內送達，則可能需要額外的費用。若您需要協助，可致電「HP 技術支援中心」，會有一位技術人員透過電話來協助您。不論損壞的零件是否必須退回，HP 皆會在與 CSR 替換零件一起運送的材料中註明。若要將損壞的零件退回 HP，您必須在指定的一段時間內（通常為五 (5) 個工作天），將損壞的零件寄回 HP。損壞的零件必須與寄送資料中隨附的相關技術文件一併退還。如果無法退還損壞的零件，HP 可能要向您收取替換費用。針對客戶自行維修情形，HP 將負責所有運費及零件退還費用並指定使用何家快遞/貨運公司。

如需 HP 的「客戶自行維修」方案詳細資訊，請連絡您當地的服務供應商。至於北美方案，請參閱 HP 網站 (http://www.hp.com/go/selfrepair)。

僅限零件的保固服務

您的「HP 有限保固」可能包含僅限零件的保固服務。在僅限零件的保固服務情況下，HP 將免費提供替換零件。

針對僅限零件的保固服務，CSR 零件替換是強制性的。如果您要求 HP 更換這些零件，HP 將會向您收取此服務所需的外出費用與勞動成本。

고객 셀프 수리

HP 제품은 수리 시간을 최소화하고 결함이 있는 부품 교체 시 더욱 융통성을 발휘할 수 있도록 하기 위해 고객 셀프 수리(CSR) 부품을 다량 사용하여 설계되었습니다. 진단 기간 동안 HP(또는 HP 서비스 공급업체 또는 서비스 협력업체)에서 CSR 부품을 사용하여 수리가 가능하다고 판단되면 HP는 해당 부품을 바로 사용자에게 보내어 사용자가 교체할 수 있도록 합니다. CSR 부품에는 두 가지 종류가 있습니다.

- **고객 셀프 수리가 의무 사항인 필수 부품.** 사용자가 HP에 이 부품의 교체를 요청할 경우 이 서비스에 대한 출장비 및 작업비가 청구됩니다.
- **고객 셀프 수리가 선택 사항인 부품.** 이 부품들도 고객 셀프 수리가 가능하도록 설계되었습니다. 하지만 사용자가 HP에 이 부품의 교체를 요청할 경우 사용자가 구입한 제품에 해당하는 보증 서비스 유형에 따라 추가 비용 없이 교체가 가능할 수 있습니다.

참고: 일부 HP 부품은 고객 셀프 수리가 불가능하도록 설계되었습니다. HP는 만족스러운 고객 보증을 위해 공인 서비스 제공업체를 통해 부품을 교체하도록 하고 있습니다. 이러한 부품들은 Illustrated Parts Catalog에 "No"라고 표시되어 있습니다.

CSR 부품은 재고 상태와 지리적 조건이 허용하는 경우 다음 영업일 납품이 가능하도록 배송이 이루어집니다. 지리적 조건이 허용하는 경우 추가 비용이 청구되는 조건으로 당일 또는 4시간 배송이 가능할 수도 있습니다. 도움이 필요하시면 HP 기술 지원 센터로 전화하십시오. 전문 기술자가 전화로 도움을 줄 것입니다. HP는 결함이 발생한 부품을 HP로 반환해야 하는지 여부를 CSR 교체 부품과 함께 배송된 자료에 지정합니다. 결함이 발생한 부품을 HP로 반환해야 하는 경우에는 지정된 기간 내(통상 영업일 기준 5일)에 HP로 반환해야 합니다. 이 때 결함이 발생한 부품은 제공된 포장 재료에 넣어 관련 설명서와 함께 반환해야 합니다. 결함이 발생한 부품을 반환하지 않는 경우 HP가 교체 부품에 대해 비용을 청구할 수 있습니다. 고객 셀프 수리의 경우, HP는 모든 운송 및 부품 반환 비용을 부담하며 이용할 운송업체 및 택배 서비스를 결정합니다.

HP 고객 셀프 수리 프로그램에 대한 자세한 내용은 가까운 서비스 제공업체에 문의하십시오. 북미 지역의 프로그램에 대해서는 HP 웹 사이트(http://www.hp.com/go/selfrepair)를 참조하십시오.

부품 제공 보증 서비스

HP 제한 보증에는 부품 제공 보증 서비스가 포함될 수 있습니다. 이러한 경우 HP는 부품 제공 보증 서비스의 조건에 따라 교체 부품만을 무료로 제공합니다.

부품 제공 보증 서비스 제공 시 CSR 부품 교체는 의무 사항입니다. 사용자가 HP에 이 부품의 교체를 요청할 경우 이 서비스에 대한 출장비 및 작업비가 청구됩니다.

Illustrated parts catalog

Mechanical components / 4 3.5” LFF HDD hot-plug model

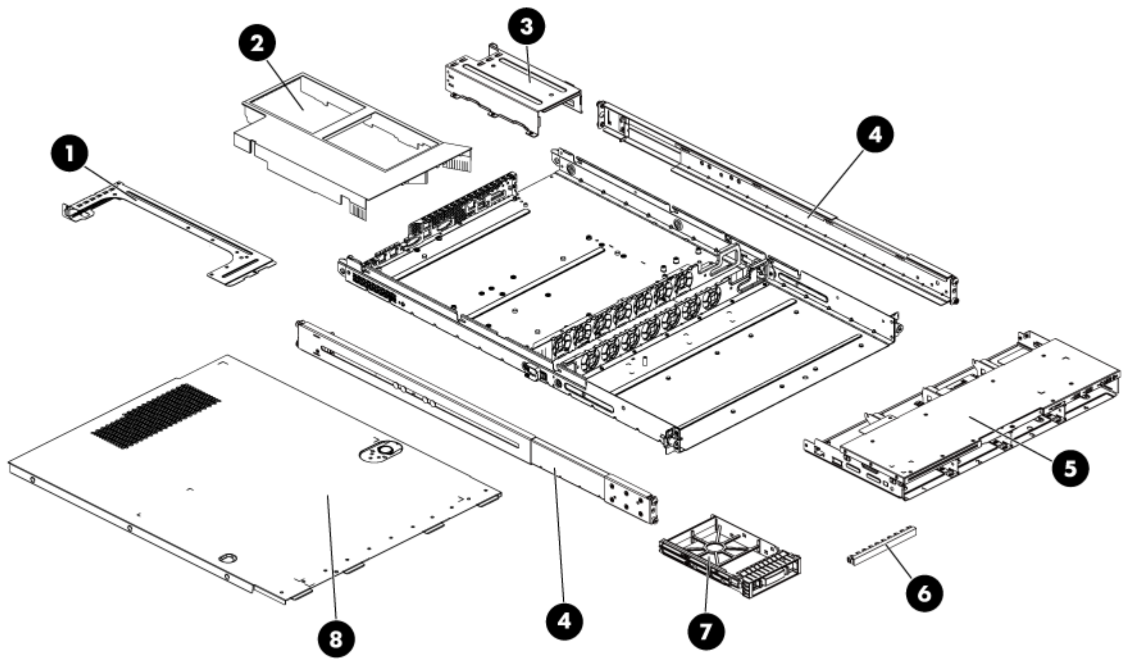


Table 1 Mechanical Components Spare Parts List / 4 3.5” LFF HDD Hot-plug Model

Item	Description	Spare Part Number	Customer Self Repair
1	PCI cage	N/A	
2	Air baffle	603889-001	Mandatory[1]
3	Power supply cage	532473-001	Mandatory[1]
4	Rail kit	573091-001	Mandatory[1]
5	Hard drive cage	532114-001	Optional[2]
6	Optical drive blank	532475-001	Mandatory[1]
7	Hard drive blank	389015-001	Mandatory[1]
8	Top cover	507262-001	Mandatory[1]

Mechanical components / 8 2.5” SFF HDD hot-plug model

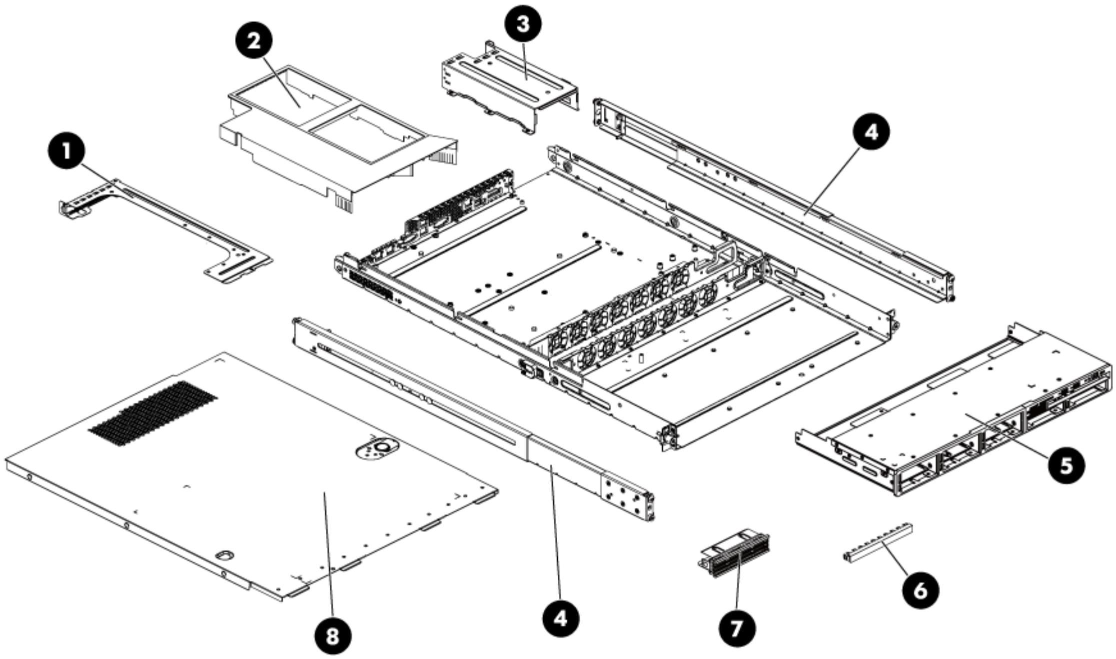


Table 2 Mechanical Components Spare Parts List / 8 2.5” SFF HDD Hot-plug Model

Item	Description	Spare Part Number	Customer Self Repair
1	PCI cage	N/A	
2	Air baffle	603889-001	Mandatory[1]
3	Power supply cage	532473-001	Mandatory[1]
4	Rail kit	573091-001	Mandatory[1]
5	Hard drive cage	532480-001	Optional[2]
6	Optical drive blank	532475-001	Mandatory[1]
7	Hard drive blank	392613-001	Mandatory[1]
8	Top cover	507262-001	Mandatory[1]

[1]Mandatory—Parts for which customer self repair is mandatory. If you request HP to replace these parts, you will be charged for the travel and labor costs of this service.

[2]Optional—Parts for which customer self repair is optional. These parts are also designed for customer self repair. If, however, you require that HP replace them for you, there may or may not be additional charges, depending on the type of warranty service designated for your product.

[3]No—Some HP parts are not designed for customer self repair. In order to satisfy the customer warranty, HP requires that an authorized service provider replace the part. These parts are identified as "No" in the Illustrated Parts Catalog.

[1]Mandatory: Obligatoire—Pièces pour lesquelles la réparation par le client est obligatoire. Si vous demandez à HP de remplacer ces pièces, les coûts de déplacement et main d'œuvre du service vous seront facturés.

[2]Optional: Facultatif—Pièces pour lesquelles la réparation par le client est facultative. Ces pièces sont également conçues pour permettre au client d'effectuer lui-même la réparation. Toutefois, si vous demandez à HP de remplacer ces pièces, l'intervention peut ou non vous être facturée, selon le type de garantie applicable à votre produit.

[3]No: Non—Certaines pièces HP ne sont pas conçues pour permettre au client d'effectuer lui-même la réparation. Pour que la garantie puisse s'appliquer, HP exige que le remplacement de la pièce soit effectué par un Mainteneur Agréé. Ces pièces sont identifiées par la mention "Non" dans le Catalogue illustré.

[1]Mandatory: Obbligatorie—Parti che devono essere necessariamente riparate dal cliente. Se il cliente ne affida la riparazione ad HP, deve sostenere le spese di spedizione e di manodopera per il servizio.

[2]Optional: Opzionali—Parti la cui riparazione da parte del cliente è facoltativa. Si tratta comunque di componenti progettati per questo scopo. Se tuttavia il cliente ne richiede la sostituzione ad HP, potrebbe dover sostenere spese addizionali a seconda del tipo di garanzia previsto per il prodotto.

[3]No: Non CSR—Alcuni componenti HP non sono progettati per la riparazione da parte del cliente. Per rispettare la garanzia, HP richiede che queste parti siano sostituite da un centro di assistenza autorizzato. Tali parti sono identificate da un "No" nel Catalogo illustrato dei componenti.

[1]Mandatory: Zwingend—Teile, die im Rahmen des Customer Self Repair Programms ersetzt werden müssen. Wenn Sie diese Teile von HP ersetzen lassen, werden Ihnen die Versand- und Arbeitskosten für diesen Service berechnet.

[2]Optional: Optional—Teile, für die das Customer Self Repair-Verfahren optional ist. Diese Teile sind auch für Customer Self Repair ausgelegt. Wenn Sie jedoch den Austausch dieser Teile von HP vornehmen lassen möchten, können bei diesem Service je nach den für Ihr Produkt vorgesehenen Garantiebedingungen zusätzliche Kosten anfallen.

[3]No: Kein—Einige Teile sind nicht für Customer Self Repair ausgelegt. Um den Garantieanspruch des Kunden zu erfüllen, muss das Teil von einem HP Servicepartner ersetzt werden. Im illustrierten Teilekatalog sind diese Teile mit „No" bzw. „Nein" gekennzeichnet.

[1]Mandatory: Obligatorio—componentes para los que la reparación por parte del usuario es obligatoria. Si solicita a HP que realice la sustitución de estos componentes, tendrá que hacerse cargo de los gastos de desplazamiento y de mano de obra de dicho servicio.

[2]Optional: Opcional—componentes para los que la reparación por parte del usuario es opcional. Estos componentes también están diseñados para que puedan ser reparados por el usuario. Sin embargo, si precisa que HP realice su sustitución, puede o no conllevar costes adicionales, dependiendo del tipo de servicio de garantía correspondiente al producto.

[3]No: No—Algunos componentes no están diseñados para que puedan ser reparados por el usuario. Para que el usuario haga valer su garantía, HP pone como condición que un proveedor de servicios

autorizado realice la sustitución de estos componentes. Dichos componentes se identifican con la palabra “No” en el catálogo ilustrado de componentes.

[1]Mandatory: Verplicht—Onderdelen waarvoor Customer Self Repair verplicht is. Als u HP verzoekt deze onderdelen te vervangen, komen de reiskosten en het arbeidsloon voor uw rekening.

[2]Optional: Optioneel—Onderdelen waarvoor reparatie door de klant optioneel is. Ook deze onderdelen zijn ontworpen voor reparatie door de klant. Als u echter HP verzoekt deze onderdelen voor u te vervangen, kunnen daarvoor extra kosten in rekening worden gebracht, afhankelijk van het type garantieservice voor het product.

[3]No: Nee—Sommige HP onderdelen zijn niet ontwikkeld voor reparatie door de klant. In verband met de garantievoorwaarden moet het onderdeel door een geautoriseerde Service Partner worden vervangen. Deze onderdelen worden in de geïllustreerde onderdelencatalogus aangemerkt met "Nee".

[1]Mandatory: Obrigatória—Peças cujo reparo feito pelo cliente é obrigatório. Se desejar que a HP substitua essas peças, serão cobradas as despesas de transporte e mão-de-obra do serviço.

[2]Optional: Opcional—Peças cujo reparo feito pelo cliente é opcional. Essas peças também são projetadas para o reparo feito pelo cliente. No entanto, se desejar que a HP as substitua, pode haver ou não a cobrança de taxa adicional, dependendo do tipo de serviço de garantia destinado ao produto.

[3]No: Nenhuma—Algumas peças da HP não são projetadas para o reparo feito pelo cliente. A fim de cumprir a garantia do cliente, a HP exige que um técnico autorizado substitua a peça. Essas peças estão identificadas com a marca “No” (Não), no catálogo de peças ilustrado.

[1]Mandatory：必須 - 顧客自己修理が必須の部品。当該部品について、もしもお客様がHPに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費がお客様に請求されます。

[2]Optional：任意 - 顧客自己修理が任意である部品。この部品も顧客自己修理用です。当該部品について、もしもお客様がHPに交換作業を依頼される場合には、お買い上げの製品に適用される保証サービス内容の範囲内においては、費用を負担していただくことなく保証サービスを受けることができます。

[3]No：除外 - HP製品の一部の部品は、顧客自己修理用ではありません。製品の保証を継続するためには、HPまたはHP正規保守代理店による交換作業が必須となります。部品カタログには、当該部品が顧客自己修理除外品である旨が記載されています。

[1]Mandatory: 强制性的 — 要求客户必须自行维修的部件。如果您请求 HP 更换这些部件，则必须为该服务支付差旅费和人工费用。

[2]Optional: 可选的 — 客户可以选择是否自行维修的部件。这些部件也是为客户自行维修设计的。不过，如果您要求 HP 为您更换这些部件，则根据为您的产品指定的保修服务类型，HP 可能收取或不再收取任何附加费用。

[3]No: 否 — 某些 HP 部件的设计并未考虑客户自行维修。为了满足客户保修的需要，HP 要求授权服务提供商更换相关部件。这些部件在部件图解目录中标记为“否”。

[1]Mandatory: 強制的 — 客戶自行維修所使用的零件是強制性的。如果您要求 HP 更換這些零件，HP 將會向您收取此服務所需的外出費用與勞動成本。

[2]Optional: 選購的 — 客戶自行維修所使用的零件是選購的。這些零件也設計用於客戶自行維修之用。不過，如果您要求 HP 為您更換，則可能需要也可能不需要負擔額外的費用，端視針對此產品指定的保固服務類型而定。

[3]No: 否 — 某些 HP 零件沒有消費者可自行維修的設計。為符合客戶保固，HP 需要授權的服務供應商更換零件。這些零件在圖示的零件目錄中，被標示為「否」。

[1] Mandatory: 필수 — 고객 셀프 수리가 의무 사항인 필수 부품. 사용자가 HP에 이 부품의 교체를 요청할 경우 이 서비스에 대한 출장비 및 작업비가 청구됩니다.

[2] Optional: 옵션 — 고객 셀프 수리가 선택 사항인 부품. 이 부품들도 고객 셀프 수리가 가능하도록 설계되었습니다. 하지만 사용자가 HP에 이 부품의 교체를 요청할 경우 사용자가 구입한 제품에 해당하는 보증 서비스 유형에 따라 추가 비용 없이 교체가 가능할 수 있습니다.

[3] No: No — 고객 셀프 수리가 불가능하도록 설계된 HP 부품. 이 부품들은 고객 셀프 수리가 불가능하도록 설계되었습니다. HP는 고객 보증을 만족시키기 위해 공인 서비스 제공업체를 통해 부품을 교체하도록 하고 있습니다.

System components / 4 3.5” LFF HDD hot-plug model

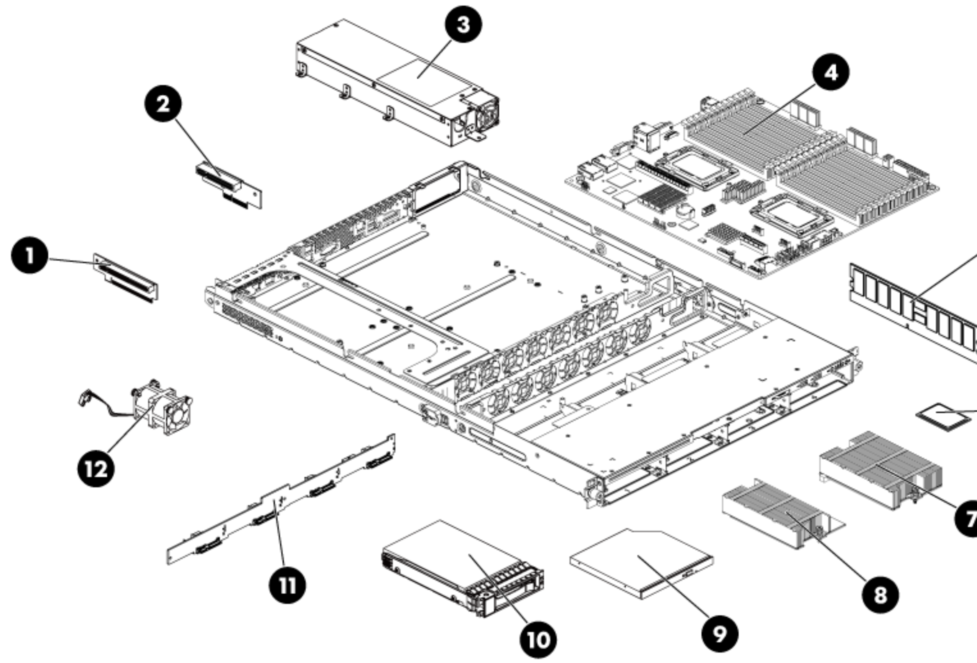


Table 3 System Components Spare Parts List / 4 3.5” LFF HDD Hot-plug Model

Item	Description	Spare Part Number	Customer Self Repair
1	PCIe x16 riser card	603891-001	Optional[2]
2	PCIe x8 riser card	603890-001	Optional[2]
3	Power supplies		
	a) Hot-plug power supply (750 W)	511778-001	Mandatory[1]
	b) Non-hot-plug power supply (500 W)	506247-001	Mandatory[1]
4	System board	603887-001	Optional[2]
5	Memory modules		
	a) DIMM 2GB PC3 10600R 128Mx8	595094-001	Mandatory[1]
	b) DIMM 4GB PC3 10600R 256Mx4	595095-001	Mandatory[1]
	c) DIMM 4GB PC3 10600R 512Mx4	595096-001	Mandatory[1]
	d) DIMM 8GB PC3 10600R 512Mx4	595097-001	Mandatory[1]
	e) DIMM 16GB PC3 8500R 512Mx4	595098-001	Mandatory[1]
	f) DIMM 4GB PC3L 8500R 256Mx8	595099-001	Mandatory[1]
	g) DIMM 8GB PC3L 8500R 512Mx4	595100-001	Mandatory[1]
	h) DIMM 2GB PC3 10600E 128Mx8	595101-001	Mandatory[1]

Table 3 System Components Spare Parts List / 4 3.5” LFF HDD Hot-plug Model

Item	Description	Spare Part Number	Customer Self Repair
	i) DIMM 4GB PC3 10600E 256Mx8	595102-001	Mandatory[1]
6	Processor Options		
	a) AMD processor 6128HE, 8c, 2.0 GHz, 55W	583751-001	Optional[2]
	b) AMD processor 6128, 8c, 2.0 GHz, 75W	598732-001	Optional[2]
	c) AMD processor 6132HE, 8c, 2.2 GHz, 65W	633546-001	Optional[2]
	d) AMD processor 6136, 8c, 2.4 GHz, 75W	583753-001	Optional[2]
	e) AMD processor 6140, 8c, 2.6 GHz, 80W	633544-001	Optional[2]
	f) AMD processor 6172, 12c, 2.1 GHz, 75W	583755-001	Optional[2]
	g) AMD processor 6174, 12c, 2.2 GHz, 80W	598729-001	Optional[2]
	h) AMD processor 6176, 12c, 2.3 GHz, 80W	633722-001	Optional[2]
	i) AMD processor 6134, 8c, 2.3 GHz, 75W	583752-001	Optional[2]
	j) AMD processor 6164, 12c, 1.7 GHz, 75W	583754-001	Optional[2]
	k) AMD processor 6164HE, 12c, 1.7 GHz, 65W	598730-001	Optional[2]
7	Processor 1 heat sink	603888-001	Optional[2]
8	Processor 2 heat sink	602500-001	Optional[2]
9	9.5mm (0.37 in.) DVD ROM optical drive (optional)	481430-001	Mandatory[1]
10	Hard Drives with carriers		
	a) LFF 160-GB, SATA, 7,200-rpm	399967-001	Mandatory[1]
	b) LFF 250-GB, SATA, 7,200-rpm	399968-001	Mandatory[1]
	c) LFF 500-GB, SATA, 7,200-rpm	399969-001	Mandatory[1]
	d) LFF 750-GB, SATA, 7,200-rpm	549320-001	Mandatory[1]
	e) LFF 1-TB, SATA, 7,200-rpm	545273-001	Mandatory[1]
	f) LFF 2-TB, SATA, 7,200-rpm	508040-001	Mandatory[1]
	g) LFF 36-GB, SAS, 10,000-rpm	376593-001	Mandatory[1]
	h) LFF 72-GB, SAS, 10,000-rpm	376594-001	Mandatory[1]
	i) LFF 146-GB, SAS, 10,000-rpm	376595-001	Mandatory[1]
	j) LFF 72-GB, SAS, dual-port, 15,000-rpm	389343-001	Mandatory[1]
	k) LFF 146-GB, SAS, dual-port, 15,000-rpm	389344-001	Mandatory[1]
	l) LFF 300-GB, SAS, dual-port, 15,000-rpm	432146-001	Mandatory[1]
	m) LFF 450-GB, SAS, dual-port, 15,000-rpm	454274-001	Mandatory[1]
	n) LFF 600-GB, SAS, dual-port, 15,000-rpm	586877-001	Mandatory[1]
	o) LFF 300GB, SAS, 6G/s	586875-001	Mandatory[1]

Table 3 System Components Spare Parts List / 4 3.5" LFF HDD Hot-plug Model

Item	Description	Spare Part Number	Customer Self Repair
	p) LFF 600GB, SAS, 6G/s	586877-001	Mandatory[1]
	q) LFF 1-TB, SAS, 6G/s	601884-001	Mandatory[1]
	r) LFF 2-TB, SAS, 6G/s	601883-001	Mandatory[1]
11	Backplane four LFF bays SAS/SATA hard drive	570079-001	Optional[2]
12	System fans	519711-001	Mandatory[1]
*	Control Panel Assembly w/cables	603892-001	Optional[2]
*	Voltage Regulator Module	536406-001	Optional[2]
*	Cable, I2C	536399-001	Optional[2]
*	Cable, USB	538820-001	Optional[2]
*	Cable, SAS	498425-001	Optional[2]
*	Cable, BBWC	488137-001	Optional[2]
*	Smart Array Controller Board	462919-001	Optional[2]
*	Cache Module 256GB	462974-001	Optional[2]
*	Battery Module, BBWC	462976-001	Optional[2]
*	SD Card Reader Board	608253-001	Optional[2]
*	Management Port Board	516806-001	Optional[2]

System components / 8 2.5″ SFF HDD hot-plug model

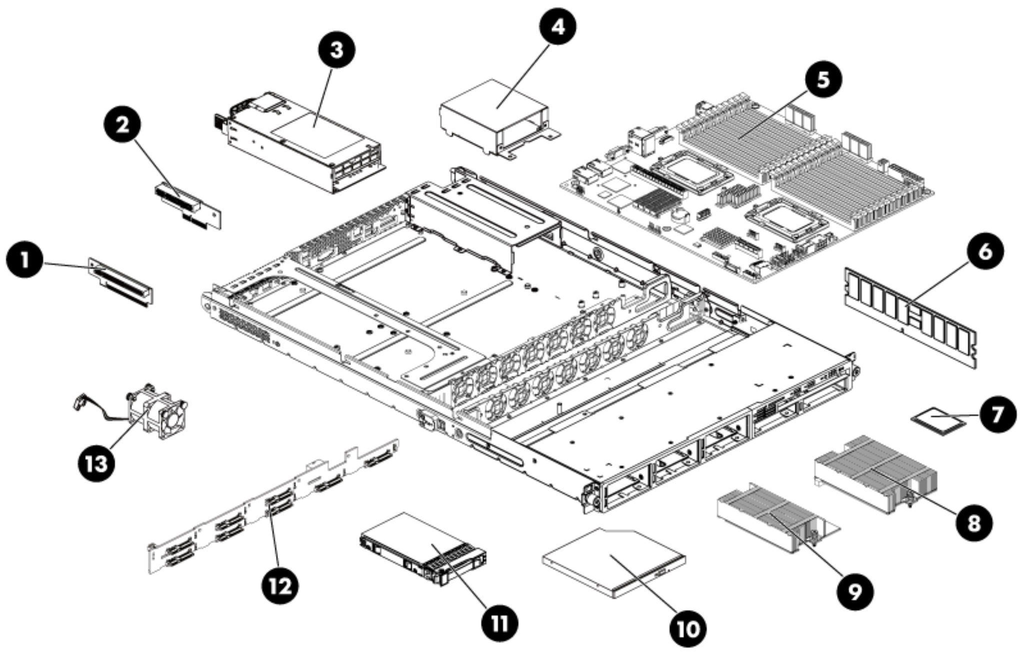


Table 4 System Components Spare Parts List / 8 2.5″ SFF HDD Hot-plug Model

Item	Description	Spare Part Number	Customer Self Repair
1	PCIe x16 riser card	603891-001	Optional[2]
2	PCIe x8 riser card	603890-001	Optional[2]
3	Power supplies		
	a) Hot-plug power supply (750 W)	511778-001	Mandatory[1]
	b) Non-hot-plug power supply (500 W)	506247-001	Mandatory[1]
4	Voltage Regulator Module	536406-001	Optional[2]
5	System board	603887-001	Optional[2]
6	Memory modules		
	a) DIMM 2GB PC3 10600R 128Mx8	595094-001	Mandatory[1]
	b) DIMM 4GB PC3 10600R 256Mx4	595095-001	Mandatory[1]
	c) DIMM 4GB PC3 10600R 512Mx4	595096-001	Mandatory[1]
	d) DIMM 8GB PC3 10600R 512Mx4	595097-001	Mandatory[1]
	e) DIMM 16GB PC3 8500R 512Mx4	595098-001	Mandatory[1]
	f) DIMM 4GB PC3L 8500R 256Mx8	595099-001	Mandatory[1]

Table 4 System Components Spare Parts List / 8 2.5” SFF HDD Hot-plug Model

Item	Description	Spare Part Number	Customer Self Repair
	g) DIMM 8GB PC3L 8500R 512Mx4	595100-001	Mandatory[1]
	h) DIMM 2GB PC3 10600E 128Mx8	595101-001	Mandatory[1]
	i) DIMM 4GB PC3 10600E 256Mx8	595102-001	Mandatory[1]
7	Processor Options		
	a) AMD processor 6128HE, 8c, 2.0 GHz, 55W	583751-001	Optional[2]
	b) AMD processor 6128, 8c, 2.0 GHz, 75W	598732-001	Optional[2]
	c) AMD processor 6132HE, 8c, 2.2 GHz, 65W	633546-001	Optional[2]
	d) AMD processor 6136, 8c, 2.4 GHz, 75W	583753-001	Optional[2]
	e) AMD processor 6140, 8c, 2.6 GHz, 80W	633544-001	Optional[2]
	f) AMD processor 6172, 12c, 2.1 GHz, 75W	583755-001	Optional[2]
	g) AMD processor 6174, 12c, 2.2 GHz, 80W	598729-001	Optional[2]
	h) AMD processor 6176, 12c, 2.3 GHz, 80W	633722-001	Optional[2]
	i) AMD processor 6134, 8c, 2.3 GHz, 75W	583752-001	Optional[2]
	j) AMD processor 6164, 12c, 1.7 GHz, 75W	583754-001	Optional[2]
	k) AMD processor 6164HE, 12c, 1.7 GHz, 65W	598730-001	Optional[2]
8	Processor 1 heat sink	603888-001	Optional[2]
9	Processor 2 heat sink	602500-001	Optional[2]
10	9.5mm (0.37 in.) DVD ROM optical drive	481430-001	Mandatory[1]
11	Hard Drives with carriers		
	a) SFF 36-GB, SAS, 10,000-rpm, hot-plug, 3G	376596-001	Mandatory[1]
	b) SFF 36-GB, SAS, 15,000-rpm, hot-plug, dual-port, 3G	418397-001	Mandatory[1]
	c) SFF 36-GB, SAS, 15,000-rpm, hot-plug, 3G	432322-001	Mandatory[1]
	d) SFF 72-GB, SAS, 10,000-rpm, hot-plug, 3G	434916-001	Mandatory[1]
	e) SFF 72-GB, SAS, 15,000-rpm, hot-plug, dual-port	418398-001	Mandatory[1]
	f) SFF 72-GB, SAS, 10,000-rpm, hot-plug, dual-port, 3G	389346-001	Mandatory[1]
	g) SFF 72-GB, SAS, 15,000-rpm, hot-plug, 3G	432321-001	Mandatory[1]
	h) SFF 146-GB, SAS, 10,000-rpm, hot-plug, dual-port	418399-001	Mandatory[1]
	i) SFF 146-GB, SAS, 10,000-rpm, hot-plug, 3G	432320-001	Mandatory[1]
	j) SFF 146-GB, SAS, 10,000-rpm, hot-plug, dual-port, 6G	507283-001	Mandatory[1]
	k) SFF 300-GB, SAS, 10,000-rpm, hot-plug, dual-port	493083-001	Mandatory[1]
	l) SFF 300-GB, SAS, 10,000-rpm, hot-plug, dual-port, 6G	507284-001	Mandatory[1]
	m) SFF 72GB, SAS, 6GB/s, 15K	586871-001	Mandatory[1]

Table 4 System Components Spare Parts List / 8 2.5” SFF HDD Hot-plug Model

Item	Description	Spare Part Number	Customer Self Repair
	n) SFF 146GB, SAS, 6GB/s, 10K	507129-002	Mandatory[1]
	o) SFF 146GB, SAS, 6GB/s, 15K	507129-010	Mandatory[1]
	p) SFF 300GB, SAS, 6GB/s, 10K	507129-004	Mandatory[1]
	q) SFF 450GB, SAS, 6GB/s, 10K	507129-012	Mandatory[1]
	r) SFF 500GB, SAS, 6GB/s, 7.2K	507129-006	Mandatory[1]
	s) SFF 600GB, SAS, 6GB/s, 10K	507129-014	Mandatory[1]
	t) SFF 36GB,SSD, SATA	461332-001	Mandatory[1]
	u) SFF 120GB, SSD, SATA	539557-008	Mandatory[1]
	v) SFF 64GB, SSD, SATA	461333-001	Mandatory[1]
	w) SFF 120GB SATA SSD	539557-010	Mandatory[1]
12	Backplane eight SFF bays SAS/SATA hard drive	532481-001	Optional[2]
13	System fans	519711-001	Mandatory[1]
*	Control Panel Assembly w/cables	603892-001	Optional[2]

NOTE: Items marked with * are not included in the system component figures. They are included in the table for providing the spare part numbers and customer self repair information.

[1]Mandatory—Parts for which customer self repair is mandatory. If you request HP to replace these parts, you will be charged for the travel and labor costs of this service.

[2]Optional—Parts for which customer self repair is optional. These parts are also designed for customer self repair. If, however, you require that HP replace them for you, there may or may not be additional charges, depending on the type of warranty service designated for your product.

[3]No—Some HP parts are not designed for customer self repair. In order to satisfy the customer warranty, HP requires that an authorized service provider replace the part. These parts are identified as "No" in the Illustrated Parts Catalog.

[1]Mandatory: Obligatoire—Pièces pour lesquelles la réparation par le client est obligatoire. Si vous demandez à HP de remplacer ces pièces, les coûts de déplacement et main d'œuvre du service vous seront facturés.

[2]Optional: Facultatif—Pièces pour lesquelles la réparation par le client est facultative. Ces pièces sont également conçues pour permettre au client d'effectuer lui-même la réparation. Toutefois, si vous demandez à HP de remplacer ces pièces, l'intervention peut ou non vous être facturée, selon le type de garantie applicable à votre produit.

[3]No: Non—Certaines pièces HP ne sont pas conçues pour permettre au client d'effectuer lui-même la réparation. Pour que la garantie puisse s'appliquer, HP exige que le remplacement de la pièce soit effectué par un Mainteneur Agréé. Ces pièces sont identifiées par la mention “Non” dans le Catalogue illustré.

[1]Mandatory: Obbligatorie—Parti che devono essere necessariamente riparate dal cliente. Se il cliente ne affida la riparazione ad HP, deve sostenere le spese di spedizione e di manodopera per il servizio.

[2]Optional: Opzionali—Parti la cui riparazione da parte del cliente è facoltativa. Si tratta comunque di componenti progettati per questo scopo. Se tuttavia il cliente ne richiede la sostituzione ad HP, potrebbe dover sostenere spese addizionali a seconda del tipo di garanzia previsto per il prodotto.

[3]No: Non CSR—Alcuni componenti HP non sono progettati per la riparazione da parte del cliente. Per rispettare la garanzia, HP richiede che queste parti siano sostituite da un centro di assistenza autorizzato. Tali parti sono identificate da un “No” nel Catalogo illustrato dei componenti.

[1]Mandatory: Zwingend—Teile, die im Rahmen des Customer Self Repair Programms ersetzt werden müssen. Wenn Sie diese Teile von HP ersetzen lassen, werden Ihnen die Versand-und Arbeitskosten für diesen Service berechnet.

[2]Optional: Optional—Teile, für die das Customer Self Repair-Verfahren optional ist. Diese Teile sind auch für Customer Self Repair ausgelegt. Wenn Sie jedoch den Austausch dieser Teile von HP vornehmen lassen möchten, können bei diesem Service je nach den für Ihr Produkt vorgesehenen Garantiebedingungen zusätzliche Kosten anfallen.

[3]No: Kein—Einige Teile sind nicht für Customer Self Repair ausgelegt. Um den Garantieanspruch des Kunden zu erfüllen, muss das Teil von einem HP Servicepartner ersetzt werden. Im illustrierten Teilekatalog sind diese Teile mit „No“ bzw. „Nein“ gekennzeichnet.

[1]Mandatory: Obligatorio—componentes para los que la reparación por parte del usuario es obligatoria. Si solicita a HP que realice la sustitución de estos componentes, tendrá que hacerse cargo de los gastos de desplazamiento y de mano de obra de dicho servicio.

[2]Optional: Opcional—componentes para los que la reparación por parte del usuario es opcional. Estos componentes también están diseñados para que puedan ser reparados por el usuario. Sin embargo, si precisa que HP realice su sustitución, puede o no conllevar costes adicionales, dependiendo del tipo de servicio de garantía correspondiente al producto.

[3]No: No—Algunos componentes no están diseñados para que puedan ser reparados por el usuario. Para que el usuario haga valer su garantía, HP pone como condición que un proveedor de servicios autorizado realice la sustitución de estos componentes. Dichos componentes se identifican con la palabra “No” en el catálogo ilustrado de componentes.

[1]Mandatory: Verplicht—Onderdelen waarvoor Customer Self Repair verplicht is. Als u HP verzoekt deze onderdelen te vervangen, komen de reiskosten en het arbeidsloon voor uw rekening.

[2]Optional: Optioneel—Onderdelen waarvoor reparatie door de klant optioneel is. Ook deze onderdelen zijn ontworpen voor reparatie door de klant. Als u echter HP verzoekt deze onderdelen voor u te vervangen, kunnen daarvoor extra kosten in rekening worden gebracht, afhankelijk van het type garantieservice voor het product.

[3]No: Nee—Sommige HP onderdelen zijn niet ontwikkeld voor reparatie door de klant. In verband met de garantievoorwaarden moet het onderdeel door een geautoriseerde Service Partner worden vervangen. Deze onderdelen worden in de geïllustreerde onderdelencatalogus aangemerkt met "Nee".

[1]Mandatory: Obrigatória—Peças cujo reparo feito pelo cliente é obrigatório. Se desejar que a HP substitua essas peças, serão cobradas as despesas de transporte e mão-de-obra do serviço.

[2]Optional: Opcional—Peças cujo reparo feito pelo cliente é opcional. Essas peças também são projetadas para o reparo feito pelo cliente. No entanto, se desejar que a HP as substitua, pode haver ou não a cobrança de taxa adicional, dependendo do tipo de serviço de garantia destinado ao produto.

[3]No: Nenhuma—Algumas peças da HP não são projetadas para o reparo feito pelo cliente. A fim de cumprir a garantia do cliente, a HP exige que um técnico autorizado substitua a peça. Essas peças estão identificadas com a marca "No" (Não), no catálogo de peças ilustrado.

HP contact information

For the name of the nearest HP authorized reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.
- In other locations, refer to the HP website at **http://www.hp.com/**.

For HP technical support:

- In North America:
  - Call 1-800-HP-INVENT (1-800-474-6836). This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored.
  - If you have purchased a Care Pack (service upgrade), call 1-800-633-3600. For more information about Care Packs, refer to the HP website at **http://www.hp.com/**.
- Outside North America, call the nearest HP Technical Support Phone Center. For telephone numbers for worldwide Technical Support Centers, refer to the HP website at **http://www.hp.com/**.

Before you contact HP

Be sure to have the following information available before you call HP:

- Technical support registration number (if applicable)
- Product serial number
- Product model name and number
- Applicable error messages
- Add-on boards or hardware model number and serial number
- Third-party hardware or software model number
- Operating system type and revision level

Removal and replacement procedures

This chapter provides subassembly/module-level removal and replacement procedures for the HP ProLiant DL165 G7 server.

Review the specifications of a new component before installing it to make sure it is compatible with the server. When you integrate new components into the system, record its model and serial number, and any other pertinent information for future reference. After completing any removal or replacement procedure, run the diagnostics program to verify that all components operate properly.

NOTE: The figures used in this chapter to illustrate procedural steps are labeled numerically (i.e., 1, 2…). When these figures are used in substep items, the alphabetically labeled instructions correspond to the numbered labels on the related figure (i.e., label 1 corresponds to step a, label 2 corresponds to step b, etc.). The procedures described in this section assume that the server is out of the rack and is positioned on a flat, stable surface.

Hardware configuration tools

You will need the following tool:

T-10/T-15 wrench

The following references and software tools will assist with the hardware configuration:

- HP ProLiant DL165 G7 Server Easy Set-up CD
- IPMI Event Log
- Diagnostics Software

Hardware configuration information

Electrostatic discharge information

An electrostatic discharge (ESD) can damage static-sensitive devices or micro circuitry. Proper packaging and grounding techniques are necessary precautions to prevent damage. To prevent electrostatic damage, observe the following precautions:

- Transport products in static-safe containers such as conductive tubes, bags, or boxes.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free stations.
- Cover workstations with approved static-dissipating material. Use a wrist strap connected to the work surface, and properly grounded (earthed) tools and equipment.
- Keep work area free of nonconductive materials, such as ordinary plastic assembly aids and foam packing.
- Make sure that you are always properly grounded (earthed) when touching a static-sensitive component or assembly.
- Avoid touching pins, leads, or circuitry.
- Always place drives with the Printed Circuit Board (PCB) assembly-side down.
- Use conductive field service tools.

Pre-installation procedure

Perform the steps below before you open the server or before you remove or replace any component.

⚠ **WARNING:** Failure to properly turn off the server before you open the server or before your start installing and removing components may cause serious damage as well as bodily harm.

1. Turn off the server and all the peripherals connected to it.
2. Unplug all cables from the power outlet(s) to avoid exposure to high energy levels that may cause burns when parts are short-circuited by metal objects such as tools or jewelry.

   If necessary, label each one to expedite reassembly.
3. Disconnect telecommunication cables to avoid exposure to shock hazard from ringing voltages.
4. If server is installed in a rack, remove server and place it on a flat surface.
5. Remove the top cover according to the instructions described in the "System cover" section in this chapter.
6. Follow the ESD precautions listed previously in this chapter when handling a server component.

IMPORTANT: To streamline the configuration process, read through the entire installation and removal procedures first and make sure you understand them before you begin.

Post-installation instructions

Observe the following items after installing or removing a server component:

1. Be sure all components are installed according to the described step-by-step instructions.
2. Reinstall the rear cage, air baffle, peripherals, and system cables that you have removed.
3. Reinstall the top cover.
4. Reinstall server into rack.
5. Connect all external cables and the AC power cord(s) to the system.
6. Press the power button on the front panel to turn on the server.

Server warnings and cautions

Before installing a server, be sure that you understand the following warnings and cautions.

WARNING: To reduce the risk of electric shock or damage to the equipment:

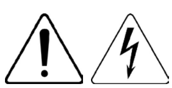
- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
- Unplug the power cord from the power supply to disconnect power to the equipment.
- Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the server.

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

CAUTION: Do not operate the server for long periods with the system cover open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.

Symbols on equipment

The following symbols may be placed on equipment to indicate the presence of potentially hazardous conditions.



This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.

WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.



This symbol indicates the presence of electric shock hazards. The area contains no user or field serviceable parts. Do not open for any reason.

WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure.



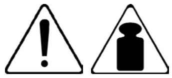
This symbol on an RJ-45 receptacle indicates a network interface connection.

WARNING: To reduce the risk of electric shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.



This symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists.

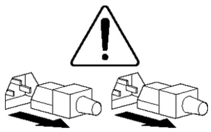
WARNING: To reduce the risk of injury from a hot component, allow the surface to cool before touching.



Weight in kg.
Weight in lb.

This symbol indicates that the component exceeds the recommended weight for one individual to handle safely.

WARNING: To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.



These symbols, on power supplies or systems, indicate that the equipment is supplied by multiple sources of power.

WARNING: To reduce the risk of injury from electric shock, remove all power cords to completely disconnect power from the system.

Powering down the server

The server does not completely power down when the power button on the front panel is pressed. The button toggles between On and Standby. The standby position removes power from most electronics and the drives, but some internal circuitry remains active. To completely remove all power from the system, disconnect all power cords from the server.

To power down the server:

1. Shut down the server as directed by the operating system documentation.
2. Press the power button to toggle to Standby.

   This places the server in standby mode changing the power LED indicator to amber. In this mode, the main power supply output is disabled. Standby does not completely disable or remove power from the system.
3. Disconnect the AC power cord(s) from the power outlet(s) and then from the server.
4. Be sure that the power LED indicator is turned off and that the fan noise has stopped.
5. Disconnect all peripheral devices from the server.

System cover

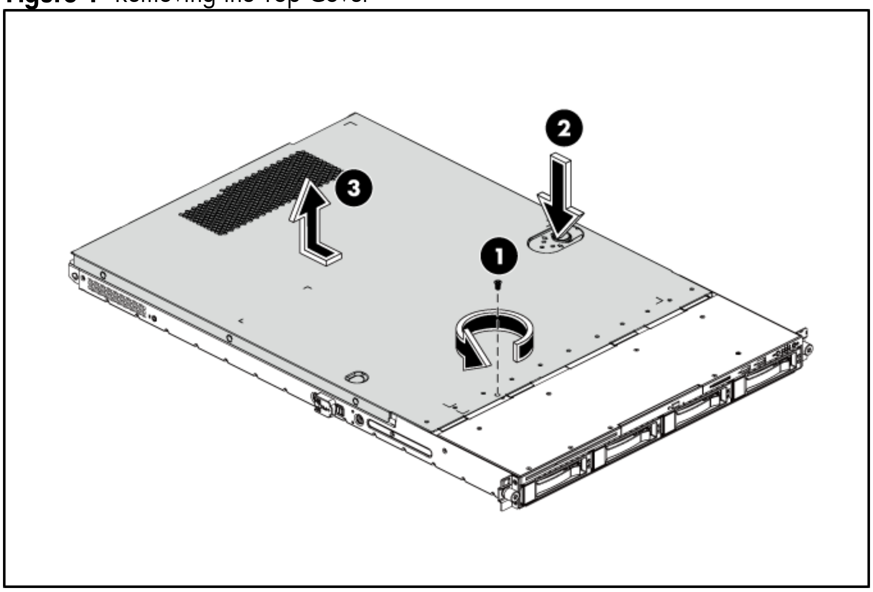
You need to remove the top cover before you can remove or replace a server component. The top cover needs to be removed to service the SAS/SATA backplane.

Top cover

To remove the top cover:

1. Loosen the screw on the top cover with a T-10 wrench.
2. Press the latch on the top cover.
3. Slide the cover toward the rear of the server and then lift the top cover to remove it from the chassis.

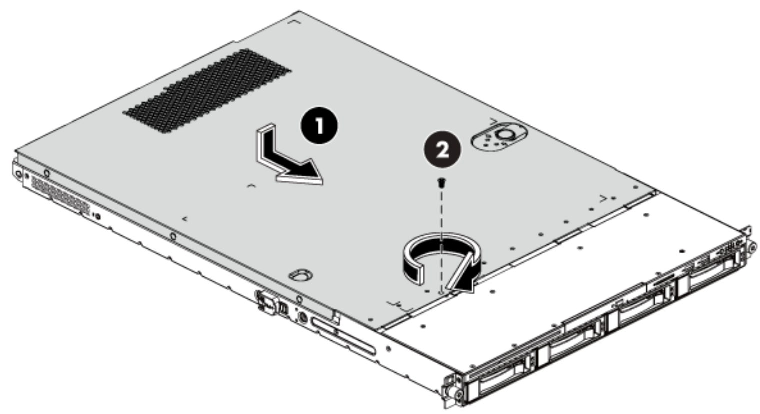
Figure 1 Removing the Top Cover



To reinstall the top cover:

1. Align the top cover to the chassis and then slide it towards the front panel to position it into place.
2. Once the cover is attached to the chassis, tighten the screw on the top cover with a T-10 wrench.

Figure 2 Reinstalling the Top Cover



Drives

The server supports 5 to 9 drive bays -- 4 drive bays for 3.5 in. LFF hard disk drives and 1 drive bay for an optical disc drive, or 8 drive bays for 2.5 in. SFF hard disk drives and 1 drive bay for an optical disc drive.

Cable management

Always follow good cable management practices when working inside the computer.

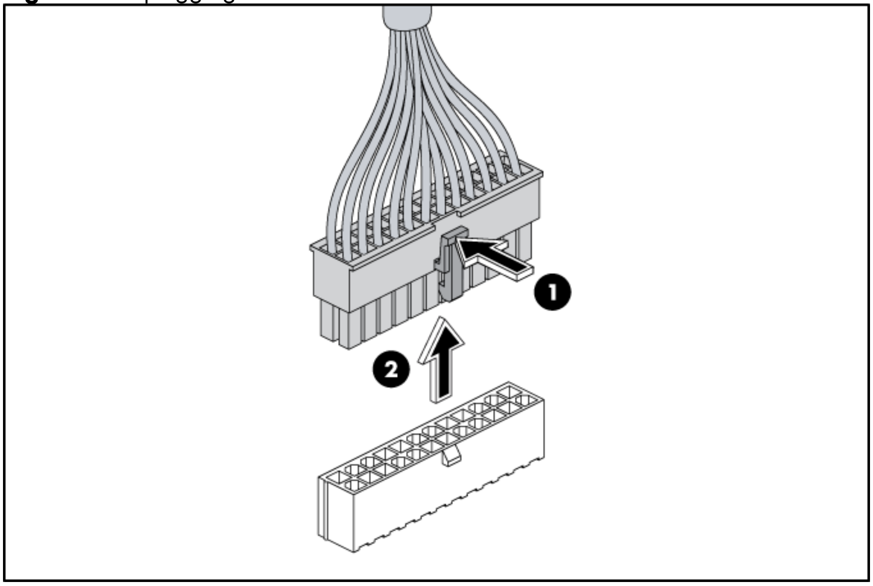
- Keep cables away from major heat sources like the heat sink.
- Do not jam cables on top of expansion cards or memory modules. Printed circuit cards are not designed to withstand excessive pressure.
- Keep cables clear of sliding or moveable parts to prevent cutting or crimping.
- When folding a flat ribbon cable, never fold to a sharp crease. Sharp creases may damage the wires.
- Some flat ribbon cables come pre-folded. Never change the folds on these cables.
- Do not sharply bend any cable. A sharp bend can break the internal wires.
- Never bend a SATA data cable tighter than a 30 mm (1.18 in.) radius.
- Never crease a SATA data cable.
- Do not rely on components like the drive cage, power supply, or system cover to push cables down into the chassis.

The next steps illustrate the removal of power cable from connector J52, 53 and 54 on system board.

1. Squeeze on the top of the retaining latch attached to the cable end of the connector.
2. Grasp the cable end of the connector and pull it straight up.

CAUTION: Always pull the connector—NEVER pull on the cable. Pulling on the cable could damage the cable and result in a failed power supply.

Figure 3 Unplugging Power Cable



Cable connections

The following tables provide information about switching power supply cable connector labels.

Table 5 Cable Connections from the 500 W Non-hot-plug Power Supply

Cable	To	Cable Designator
Switching power supply	System board 24-pin power connector	P1
Switching power supply	System board 8-pin power connector	P11
Switching power supply	System board 4-pin power connector	P2
Switching power supply	System board power backplane connector	P10
Switching power supply	4 LFF HDD hot-plug Backplane power connector	P4

Table 6 Cable Connections from the 750 W Hot-plug Power Supply

Cable	To	Cable Designator
Switching power supply	System board 24-pin power connector	P1
Switching power supply	System board 8-pin power connector	P11
Switching power supply	System board 4-pin power connector	P2
Switching power supply	System board power backplane connector	P10
Switching power supply	4 LFF HDD hot-plug Backplane power connector	P4

The following tables provide the system board designators that various cables plug into. For more detailed information about system board components, see “Figure 93 System Board Components”.

Table 7 Cable Connections from the System Board

Cable	To	System Board Designator
20-pin front panel connector	Front panel	J98
Front panel USB 2.0 port	Front panel USB 2.0	J8
SD card USB 2.0 port	SD reader module	J81
Internal USB 2.0 port	Internal USB cable kit	J49
24-pin power connector	Power supply	J52
8-pin power connector	Power supply	J53
4-pin power connector	Power supply	J54
3-pin backplane I^2C connector	Backplane	J68
16-pin power backplane control connector	Power supply	J55
6-pin system fan 1 connector	System fan 1	J61
6-pin system fan 2 connector	System fan 2	J62
6-pin system fan 3 connector	System fan 3	J63
6-pin system fan 4 connector	System fan 4	J64
6-pin system fan 5 connector	System fan 5	J65
6-pin system fan 6 connector	System fan 6	J66
6-pin system fan 7 connector	System fan 7	J69

Table 8 Drive Cable Connections / 4 3.5" LFF Hot-plug HDD Model

Cable	To	System Board Designator
Mini-SAS connector for SATA	Backplane	J13

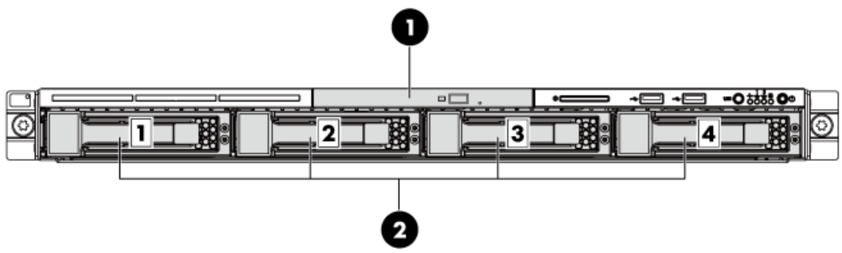
Table 9 Drive Cable Connections / 8 2.5" SFF Hot-plug HDD Model

Cable	To	System Board Designator
PCI storage controller card (LP)	8 2.5" SFF HDD backplane	3rd party mini SAS connector
PCI storage controller card (LP)	8 2.5" SFF HDD backplane	3rd party mini SAS connector

Drive bay configuration

The server supports a maximum of 5 to 9 drive bays -- 4 drive bays for 3.5 in. LFF hard disk drives and 1 drive bay for 9.5mm (0.37 in.) optical disc drive, or 8 drive bays for 2.5 in. SFF hard disk drives and 1 drive bay for 9.5mm (0.37 in.) optical disc drive.

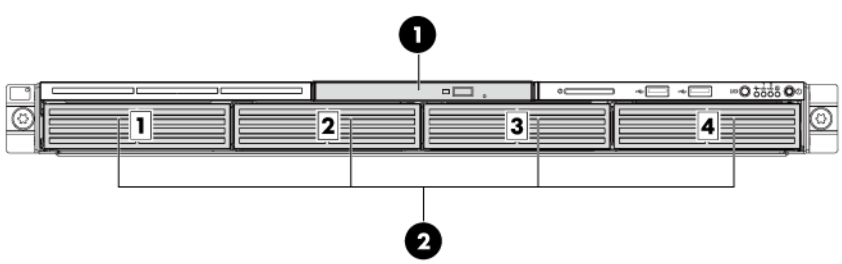
Figure 4 System Drive Bays / 4 3.5" LFF HDD Hot-plug Model



Item	Description
1	9.5mm (0.37 in.) DVD ROM optical drive (optional)
2	3.5 in. hard disk drive bays (4)

The HDD bays support both SAS and SATA drives.

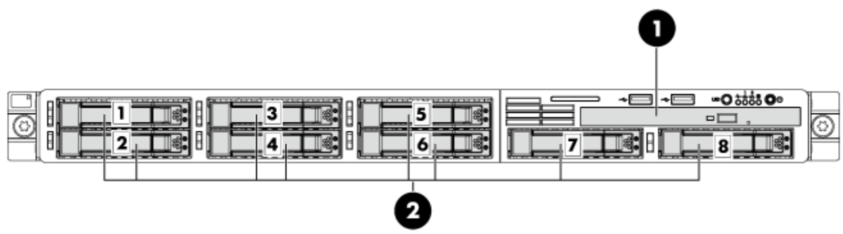
Figure 5 System Drive Bays / 4 3.5" LFF HDD Non-hot-plug Model



Item	Description
1	9.5mm (0.37 in.) DVD ROM optical drive (optional)
2	3.5 in. hard disk drive bays (4)

The HDD bays support SATA drives.

Figure 6 System Drive Bays / 8 2.5" SFF HDD Hot-plug Model



Item	Description
1	9.5mm (0.37 in.) DVD ROM optical drive
2	2.5 in. hard disk drive bays (8)

The HDD bays only support SAS drives.

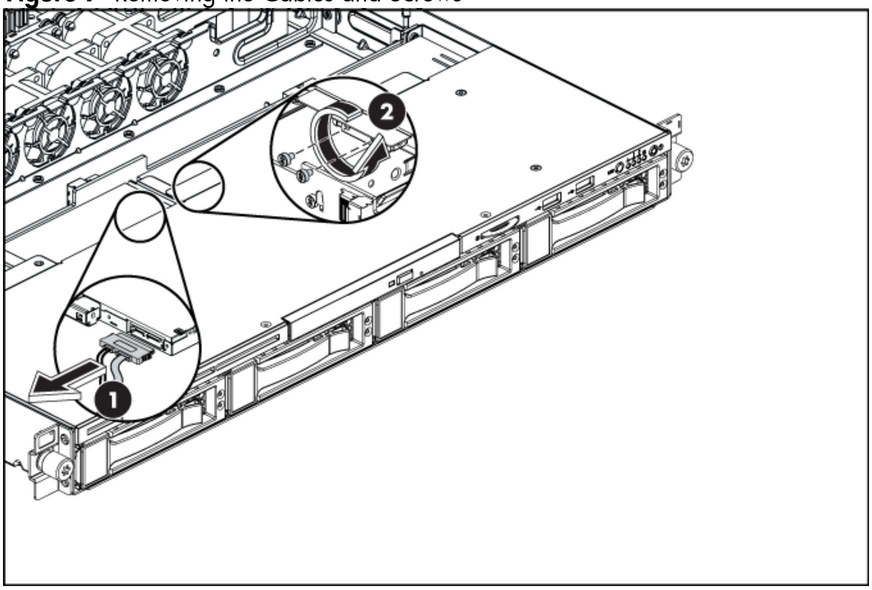
Optical Media Device Bay

The optical media device bay of servers with 4 LFF HDDs and 8 SFF HDDs support the optional installation of a 9.5 mm (0.37 in.) DVD ROM optical drive, so the following procedure is for server with 4 LFF HDDs.

To remove the optical drive carrier:

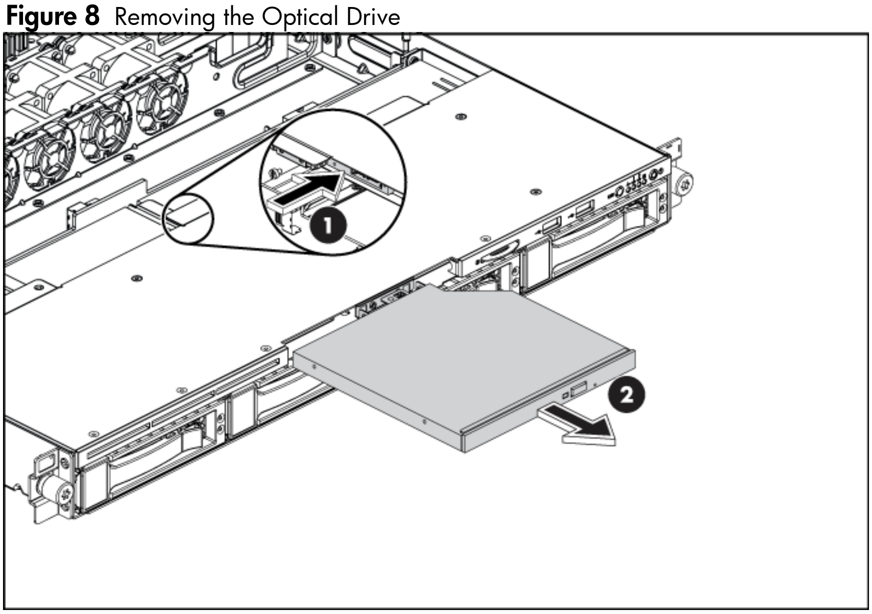
1. Remove the top cover and then unplug the SATA and power cables.
2. Loosen the screws.

Figure 7 Removing the Cables and Screws



3. Push the optical drive toward the front of the unit.
4. Pull the optical drive out of the chassis.

Figure 8 Removing the Optical Drive



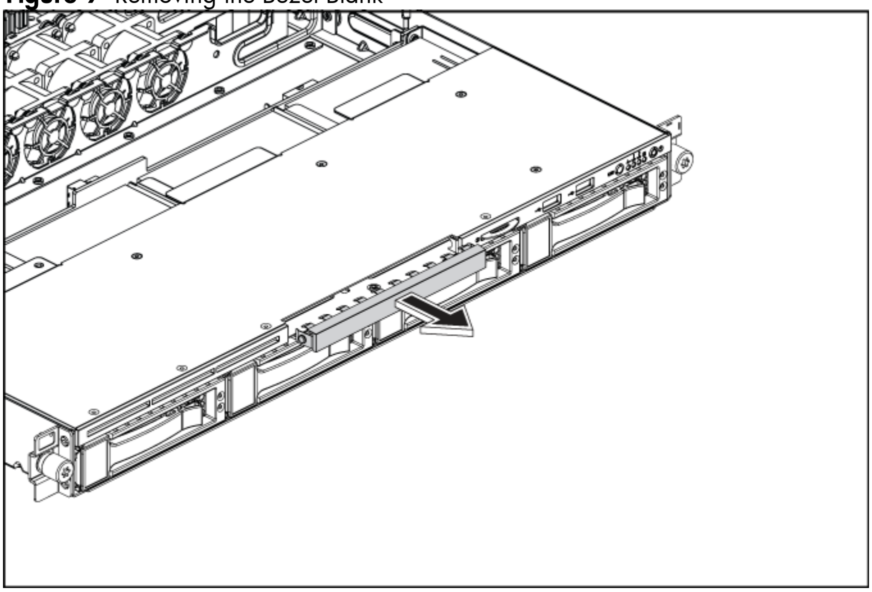
IMPORTANT: If you removed an optical drive without plans of installing a new one, you must reinstall the blank to maintain proper system airflow.

To remove the bezel blank:

1. Turn off the server and all the peripherals connected to it.
2. Unplug all external cables and AC power cords. If necessary, label each one to expedite reassembly.
3. Remove the unit from the rack and place on a flat surface.
4. Remove the top cover.
5. Pull the bezel blank out of the carrier.

CAUTION: Do not discard the bezel blank. If the optical drive is removed in the future, you must reinstall the bezel blank to maintain proper system function.

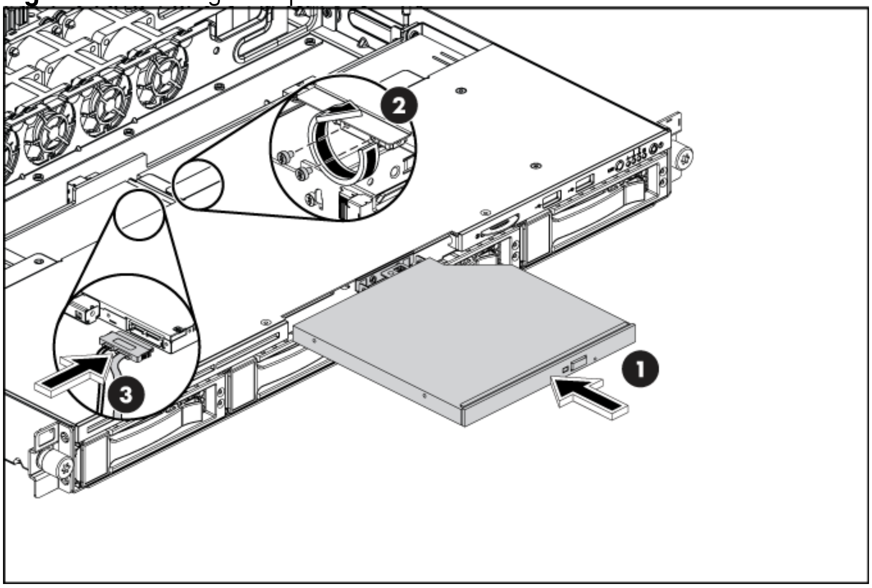
Figure 9 Removing the Bezel Blank



To install the optical drive:

1. Slide the optical drive assembly into the chassis.
2. Remove the top cover, fasten the screws and connect the IDE data and power cables to their corresponding connectors on the optical drive.

Figure 10 Installing the Optical Drive

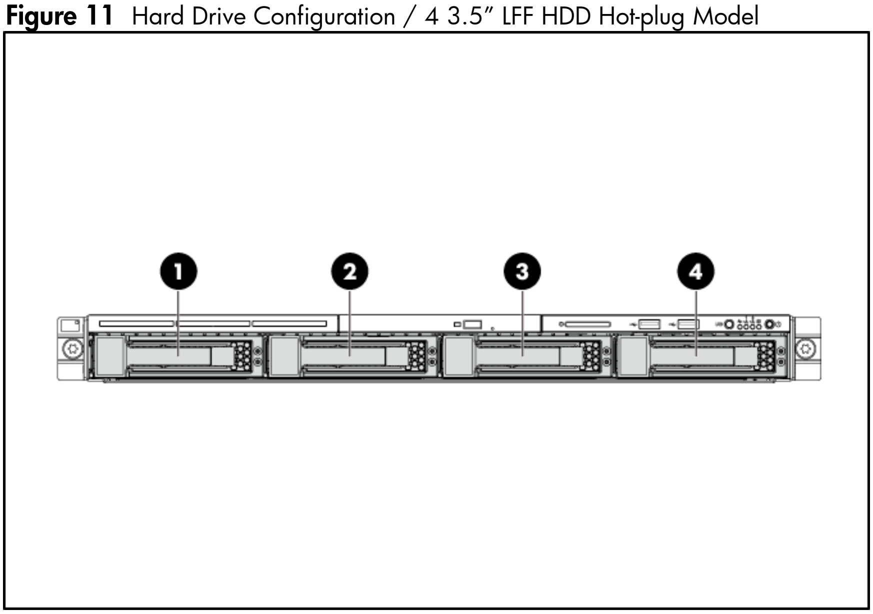


Hard drives

The drive bays on the front panel can accommodate up to four LFF or eight SFF hard drives. You can install SAS or SATA hard drives in the server.

For servers with 4 LFF HDDs, the hard drives installed in the server are labeled from Device 1 to Device 4, from left to right, when viewed from the front of the server.

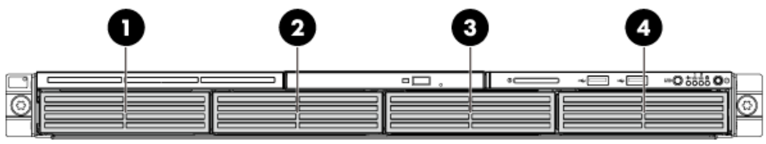
Figure 11 Hard Drive Configuration / 4 3.5" LFF HDD Hot-plug Model



Item	Description
1	1st SAS/SATA hard drive
2	2nd SAS/SATA hard drive
3	3rd SAS/SATA hard drive

Item	Description
4	4th SAS/SATA hard drive

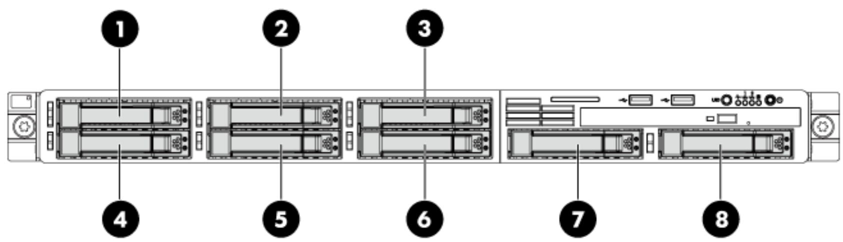
Figure 12 Hard Drive Configuration / 4 3.5" LFF HDD Non-hot-plug Model



Item	Description
1	1st SAS/SATA hard drive
2	2nd SAS/SATA hard drive
3	3rd SAS/SATA hard drive
4	4th SAS/SATA hard drive

For servers with 8 SFF HDDs, the hard drives installed in the server are labeled from Device 1 to Device 8, from top to bottom, left to right, when viewed from the front of the server.

Figure 13 Hard Drive Configuration / 8 2.5" SFF HDD Hot-plug Model



Item	Description
1	1st SAS hard drive
2	3rd SAS hard drive
3	5th SAS hard drive
4	2nd SAS hard drive
5	4th SAS hard drive
6	6th SAS hard drive
7	7th SAS hard drive
8	8th SAS hard drive

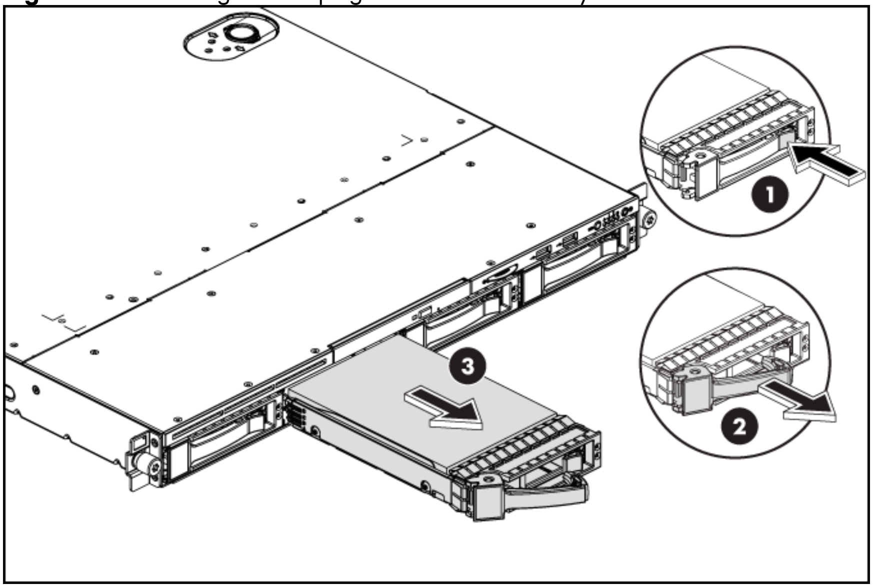
The hot-plug HDD for the servers with 4 3.5" LFF HDDs and 8 2.5" SFF HDDs share the same replacement procedures. Here we take the server with 4 3.5" LFF HDDs as an example for your reference.

To remove the hot-plug hard drive:

1. Press the hard disk carrier button to release the ejector lever.
2. Use the HDD carrier latch to pull the drive out of the cage.

   Make sure to support the drive when pulling it out of the cage.
3. Pull the hard drive assembly out of the drive bay.

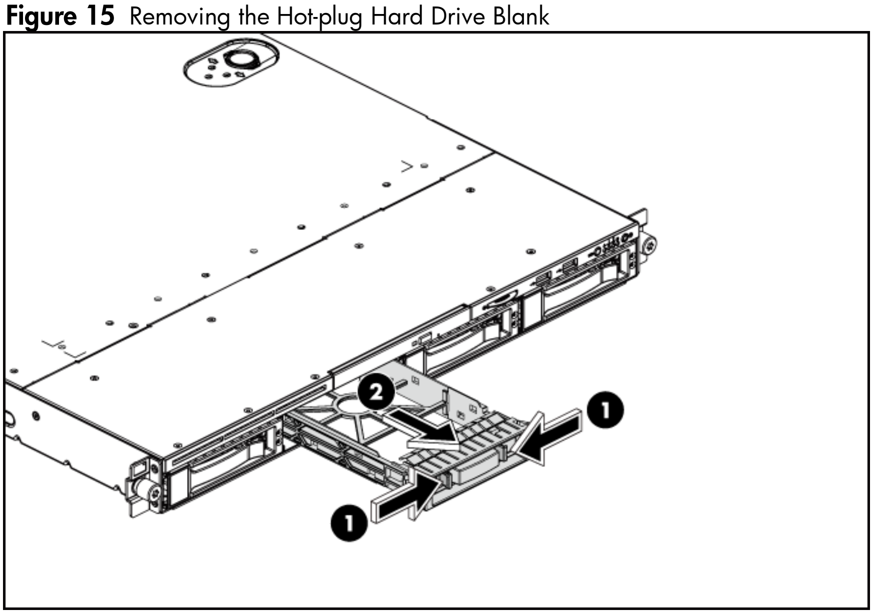
Figure 14 Removing the Hot-plug Hard Drive Assembly



To install the hot-plug hard drive:

1. Press the release tabs, and then pull the hard drive blank out of the chassis.

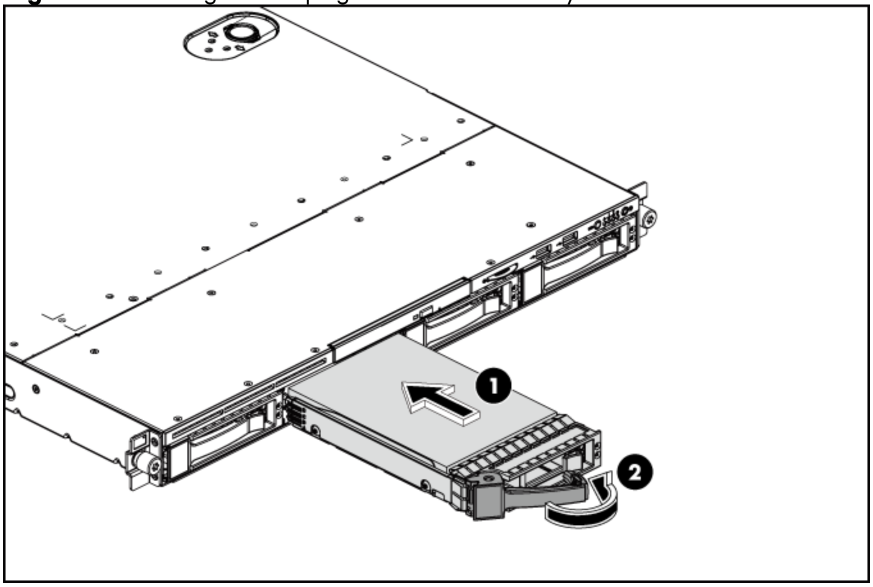
Figure 15 Removing the Hot-plug Hard Drive Blank



IMPORTANT: Do not discard the hard drive blank. If the drive is removed in the future, you must reinstall the hard drive blank to maintain proper system airflow.

2. Install a hard drive.
   a. Push the hard drive assembly into the drive bay until it stops.
   b. Press the HDD carrier latch inward until it clicks.

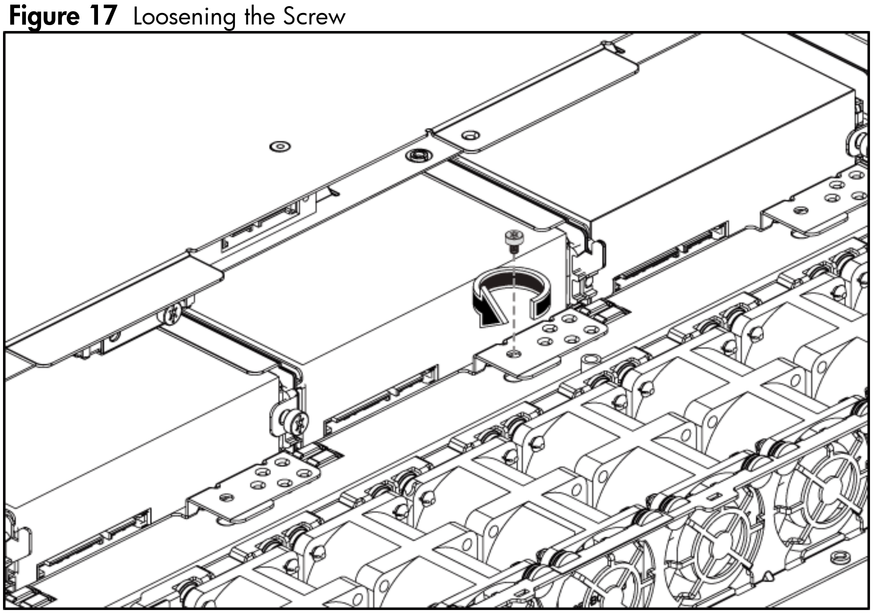
Figure 16 Installing the Hot-plug Hard Drive Assembly



To remove the non-hot-plug hard drive:

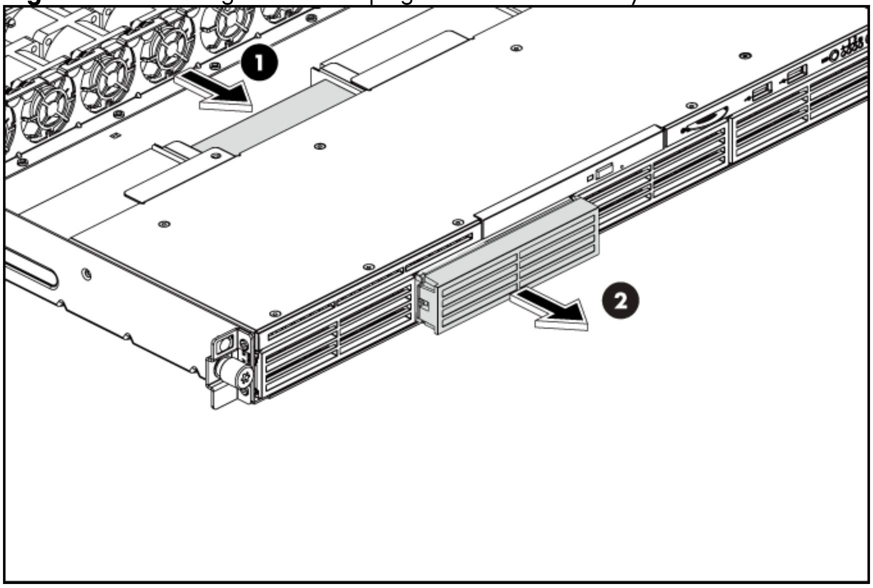
1. Loosen the screw with the T-10/T-15 wrench provided.

Figure 17 Loosening the Screw



2. Push the hard drive toward the front of the unit.
3. Pull the hard drive assembly out of the drive bay.

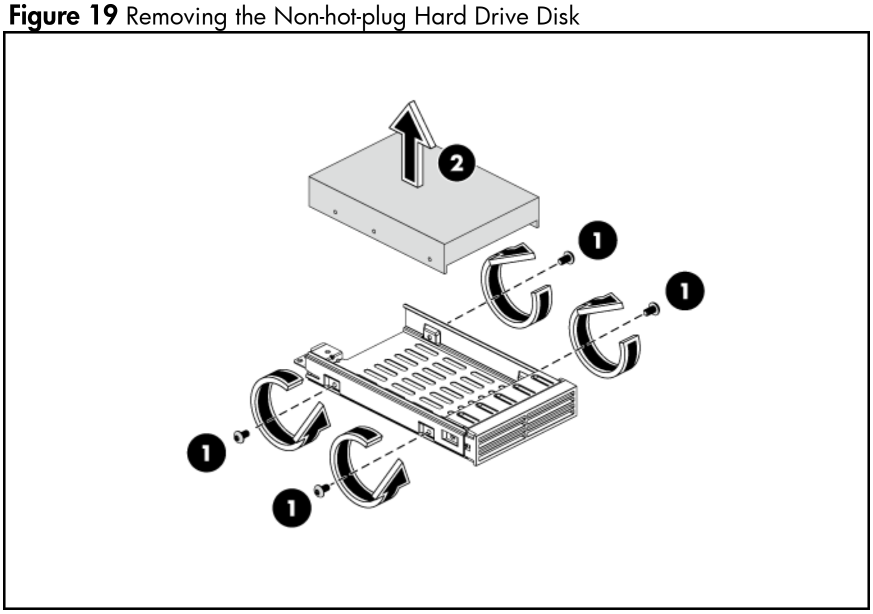
Figure 18 Removing the Non-hot-plug Hard Drive Assembly



To remove a non-hot-plug hard drive disk from the carrier:

1. Loosen the four screws on the carrier (two on each side).
2. Lift the hard drive from the carrier.

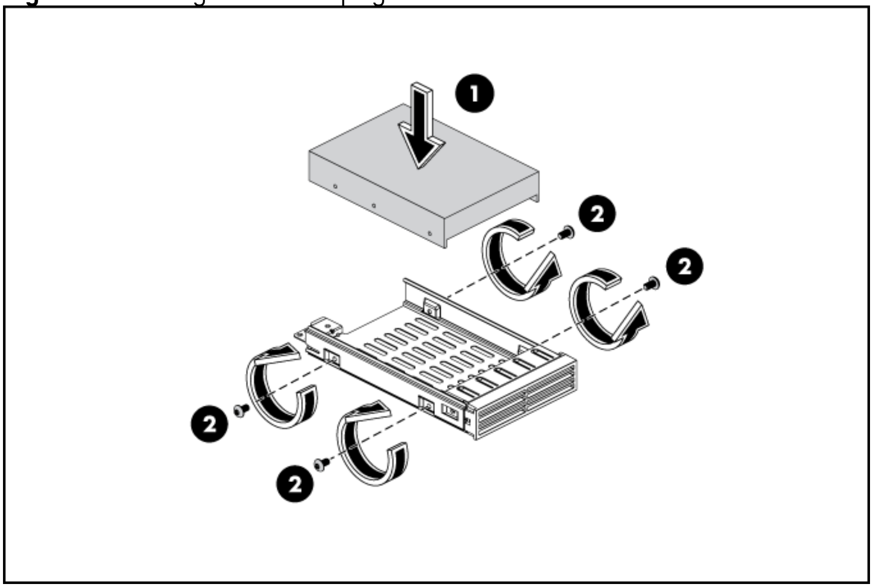
Figure 19 Removing the Non-hot-plug Hard Drive Disk



To install a non-hot-plug hard drive:

1. Put the non-hot-plug hard drive disk into the carrier.
2. Fasten the HDD to the carrier using the screws (two on each side).

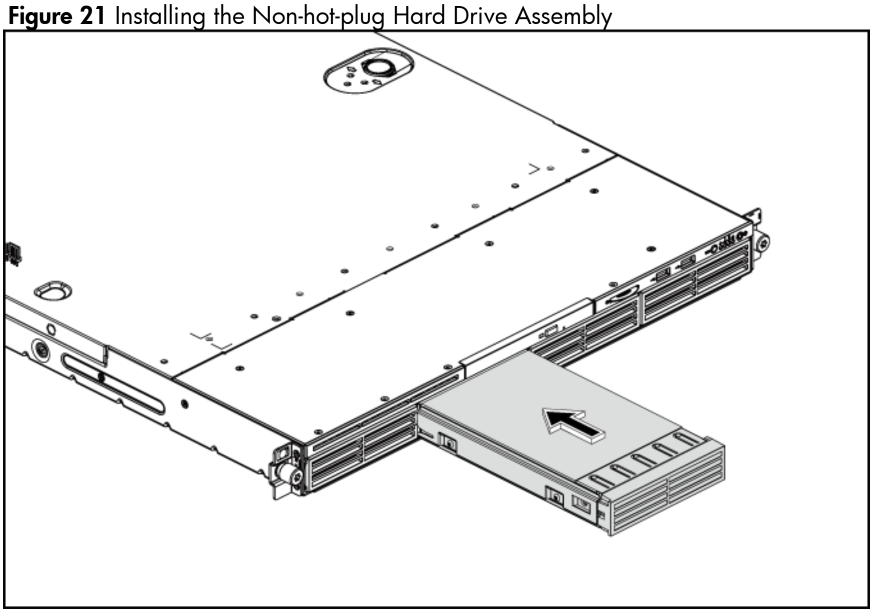
Figure 20 Installing the Non-hot-plug Hard Drive Disk into the Carrier



To install a non-hot-plug hard drive into the server:

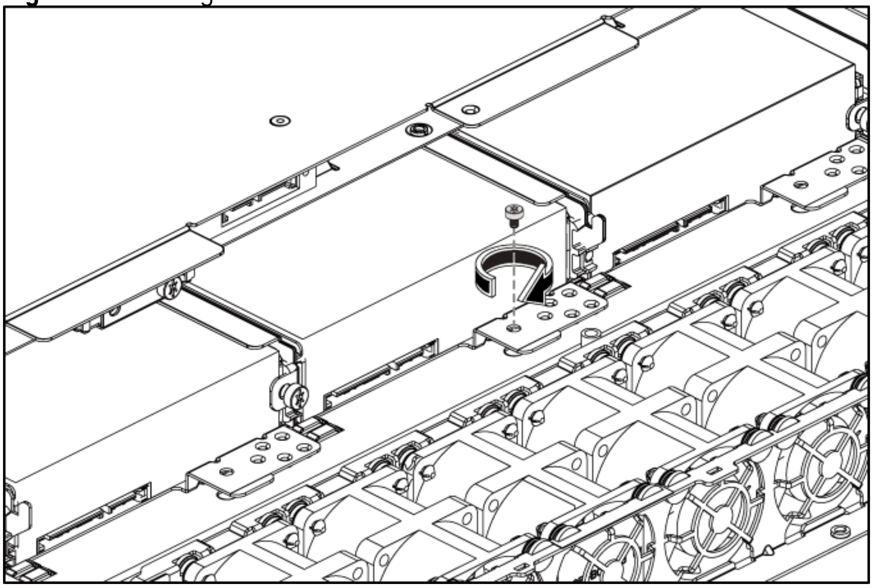
1. Remove the hard drive blank from the front of the system if installed.
2. Push the hard drive assembly into the drive bay until it stops.

Figure 21 Installing the Non-hot-plug Hard Drive Assembly



3. Fasten the screw with the T-10/T-15 wrench provided to secure the hard drive to the chassis.

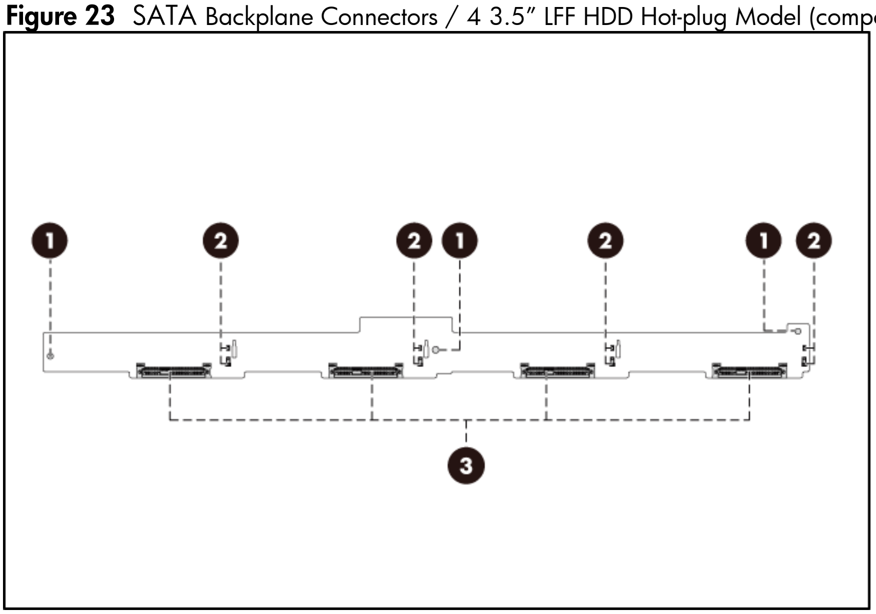
Figure 22 Fastening the Screw



SAS/SATA HDD backplane

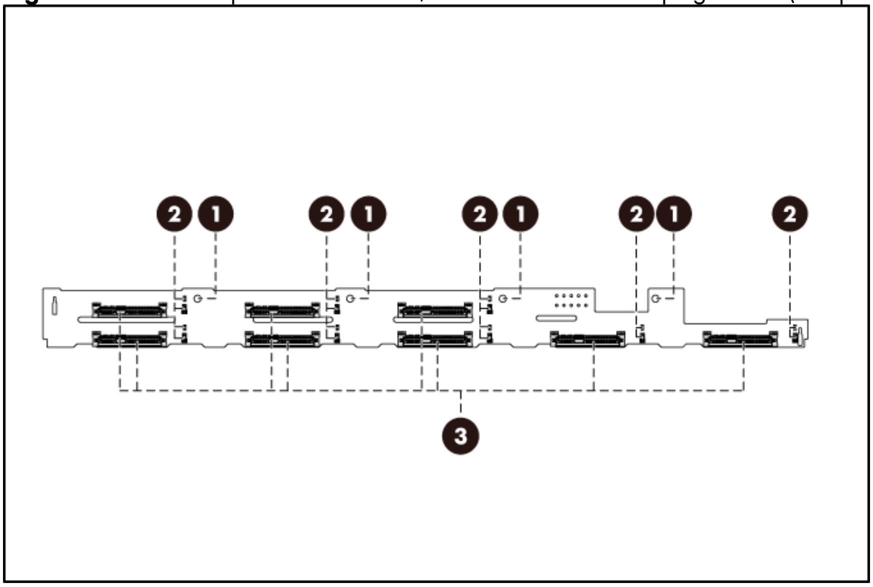
The following figures show the front and back side of the backplane.

Figure 23 SATA Backplane Connectors / 4 3.5" LFF HDD Hot-plug Model (component side)



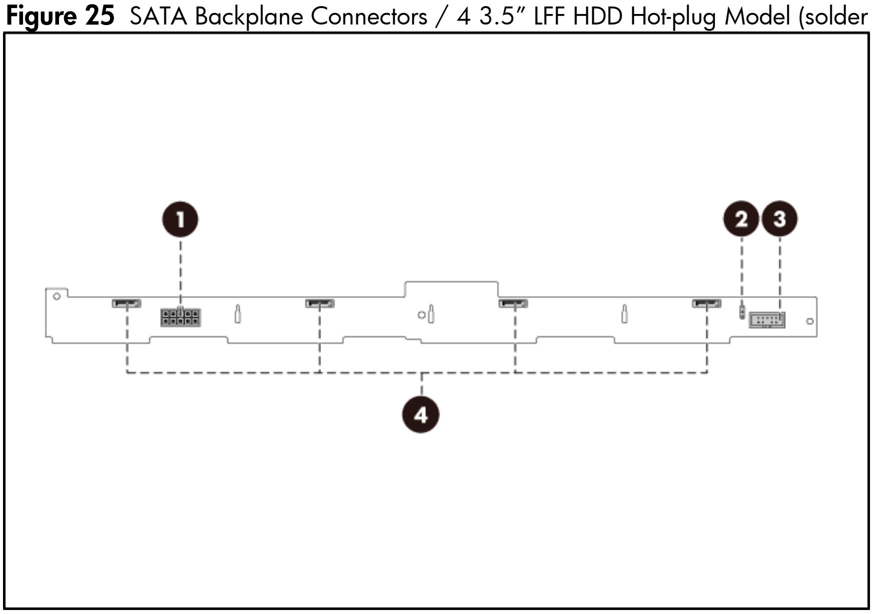
Item	Description
1	Screw holes
2	LED indicators
3	Headers for hard drive

Figure 24 SAS Backplane Connectors / 8 2.5" SFF HDD Hot-plug Model (component side)



Item	Description
1	Screw holes
2	LED indicators
3	Headers for hard drive

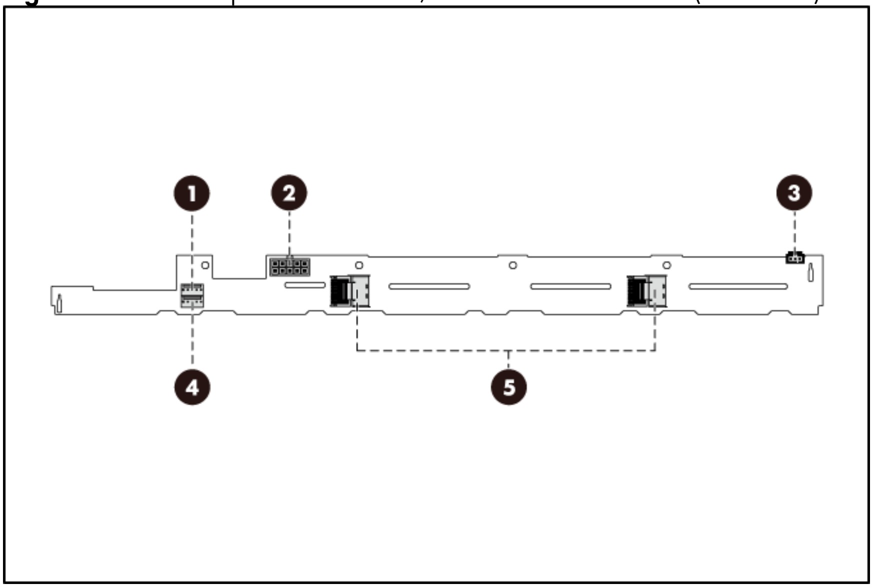
Figure 25 SATA Backplane Connectors / 4 3.5" LFF HDD Hot-plug Model (solder side)



Item	Description
1	Power connector
2	I^2C connector
3	SGPIO connector

Item	Description
4	SATA connectors

Figure 26 SAS Backplane Connectors / 8 2.5" SFF HDD Model (solder side)

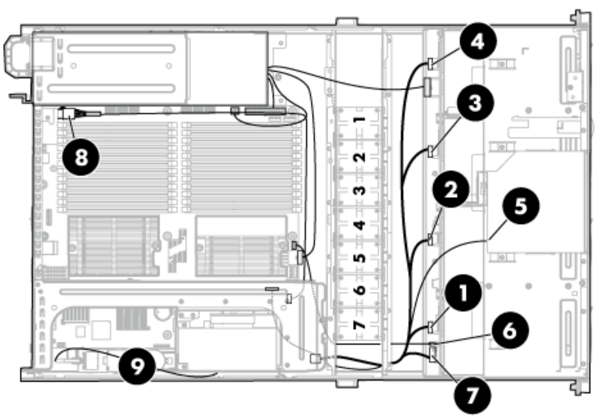


Item	Description
1	PIC 1 PROG connector
2	Power connector
3	I^2C connector
4	PIC 2 PROG connector
5	Mini SAS connectors

Cable Routing

Cable routing for hot-plug SAS model:

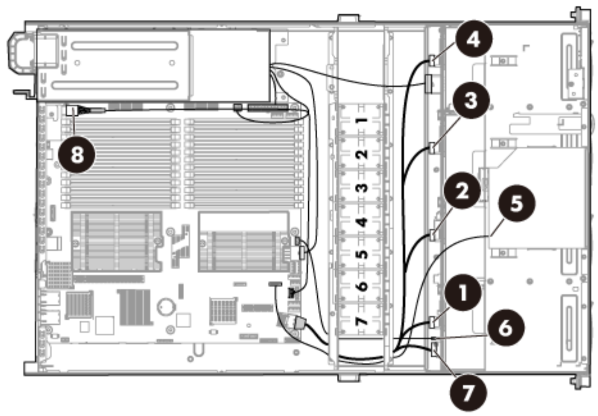
Figure 27 Cable for Hot-plug SAS Model



Item	Description
1-4	Mini-SAS Host Fan Out 4 SATA cable
5	SATA ODD cable
6	HDD backplane I^2C cable
7	HDD backplane SGPIO cable
8	SD card reader cable (optional)
9	BBWC/FBWC cable

Cable routing for pluggable SATA model:

Figure 28 Cable for Pluggable SATA Model



Item	Description
1-4	Mini-SAS Host Fan Out 4 SATA cable
5	SATA ODD cable
6	HDD backplane I^2C cable
7	HDD backplane SGPIO cable
8	SD card reader cable (optional)

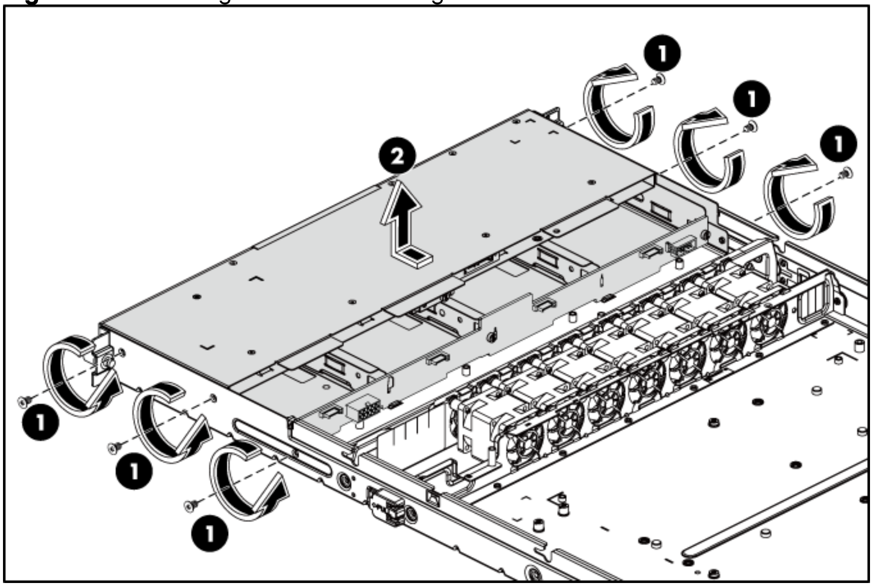
⚠ **WARNING:** Ensure that the system is powered off and all power sources have been disconnected from the server. Voltages are present at various locations within the server whenever an AC power source is connected. This voltage is present even when the main power switch is in the off position.

To remove the backplane:

The backplanes for the servers with 4 LFF HDDs and 8 SFF HDDs share the same replacement procedures. Here we take the SAS/SATA backplane for the server with 4 LFF HDDs as an example for your reference.

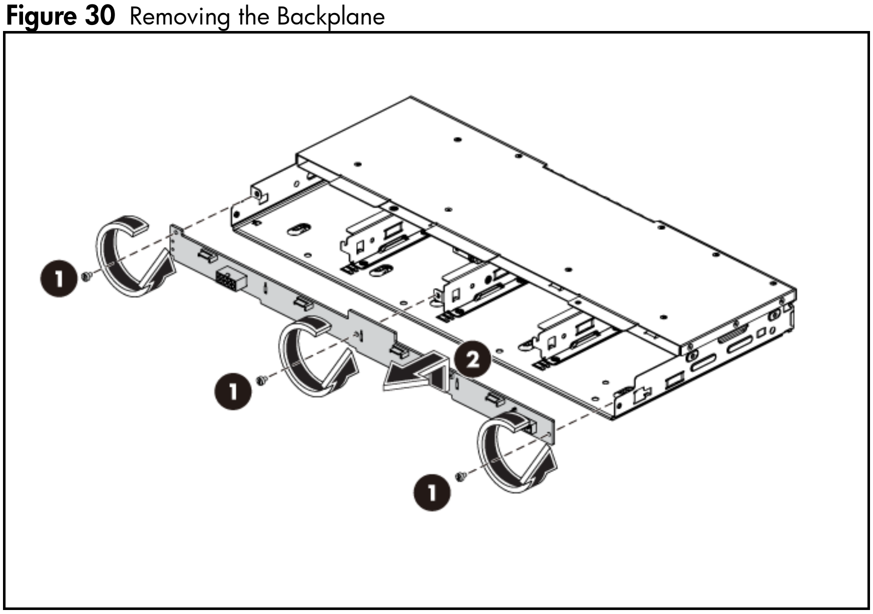
1. Remove all drives out of the drive bays.
2. Refer to the “Optical Media Device Bay” and “Hard drives” sections in this chapter for detailed procedures.
3. Remove the top cover.
4. Remove all cables connected to the backplane.
5. Remove the hard drive cage.
    a. Loosen all screws that secure the hard drive cage to the chassis.
    b. Slide the hard drive cage out and then lift it up. Remove the hard drive cage from the chassis.

Figure 29 Removing the Hard Drive Cage



6. Remove the backplane.
   a. Remove all cables including optical drive cables.
   b. Remove the three screws that secure the backplane to the hard drive cage.
   c. Pull the backplane up and out to release it from the hard drive cage.

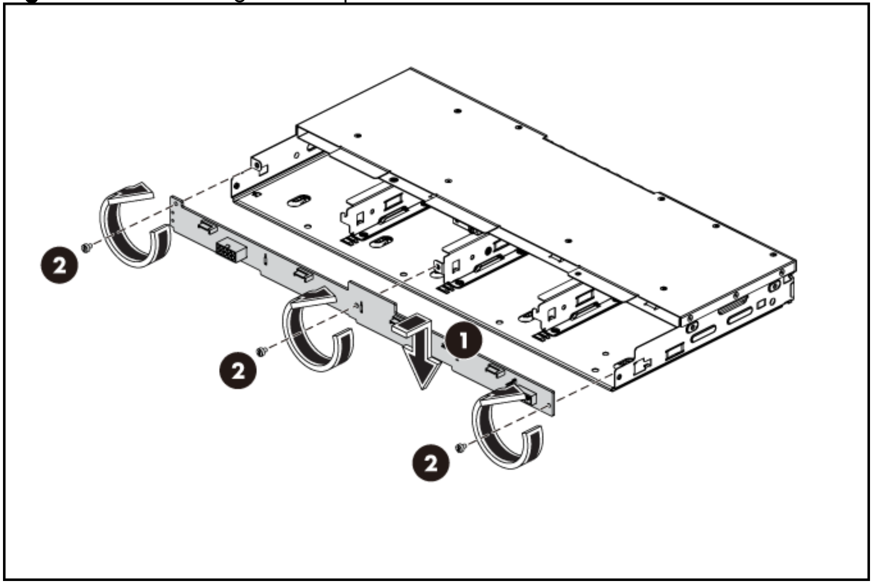
Figure 30 Removing the Backplane



To reinstall the backplane:

1. Orient the backplane so that the notches on the backplane align with the hook on the drive cage and then press the backplane down until it clicks into place.
2. Secure the backplane with three screws.

Figure 31 Reinstalling the Backplane



3. Install all cables.

System board configuration

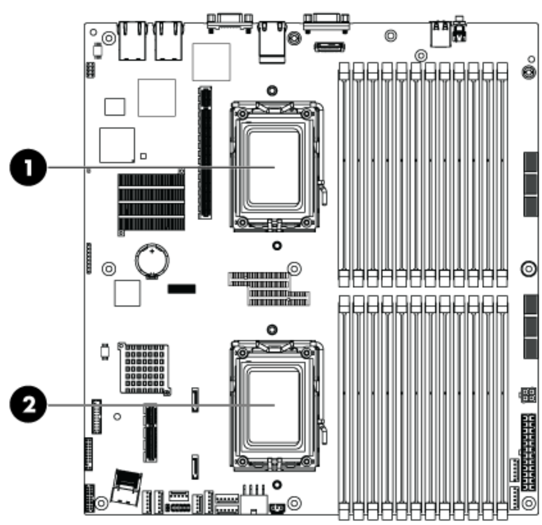
Processor

HP ProLiant DL165 G7 Server supports AMD 8-core/12-core G34-Magny-Cours processors. If a single processor is installed, then use socket 1. When two processors are used, the server supports boot functions through the processor installed in socket 1. However, if processor 1 fails, the system cannot boot up, and if processor 2 fails, the system will be automatically booted from processor 1 and provide a processor failure message.

The processor socket supports 2P AMD G34-Magny-Cours processor with integrated memory controller.

CAUTION: It is recommended to use processors of the same speeds or cache sizes to prevent possible server malfunction.

Figure 32 Processor Locations



Item	Description
1	Processor 1
2	Processor 2

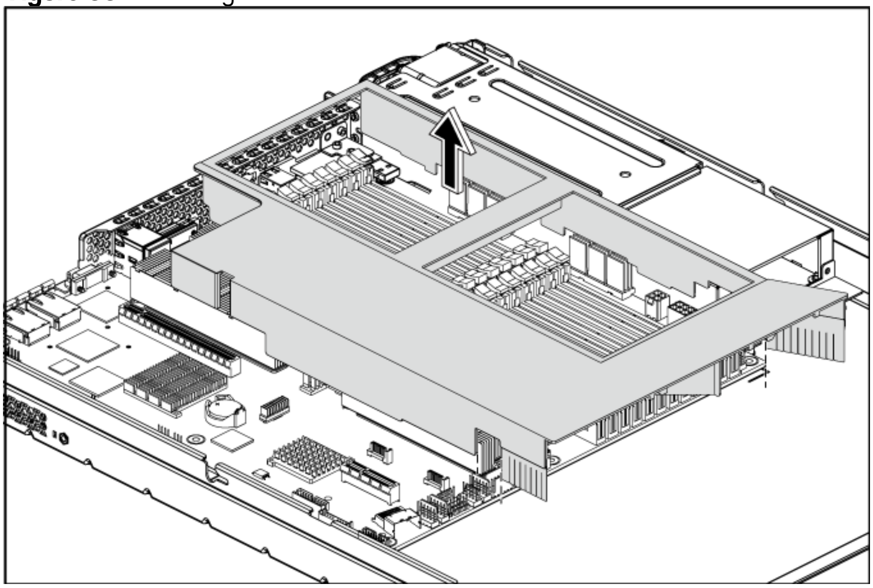
WARNING: To reduce the risk of personal injury from hot surfaces, allow the heat sink and the processor to cool before touching them.

NOTE: Before installing the processor, remove the air baffle.

To remove the air baffle:

1. Gently rock the air baffle up.
2. Take the air baffle out from the system board.

Figure 33 Removing the Air Baffle



NOTE: Due to the position of the two processors in the chassis, the heat sink of processor 2 blocks the air from the system fans to the heat sink of processor 1, which results in insufficient cooling to processor 1. In order to reach the system required thermal performance, the system is designed with two different heat sinks. Please make sure to install the two heat sinks in the correct position.

To remove the heat sink:

1. Loosen the two spring-loaded screws.
2. Lift the heat sink away from the system board.

△ **CAUTION:** Place the heat sink down in an upright position with the thermal patch facing upward. Do not let the thermal patch touch the work surface.

Figure 34 Removing the Heat Sink of Processor 1

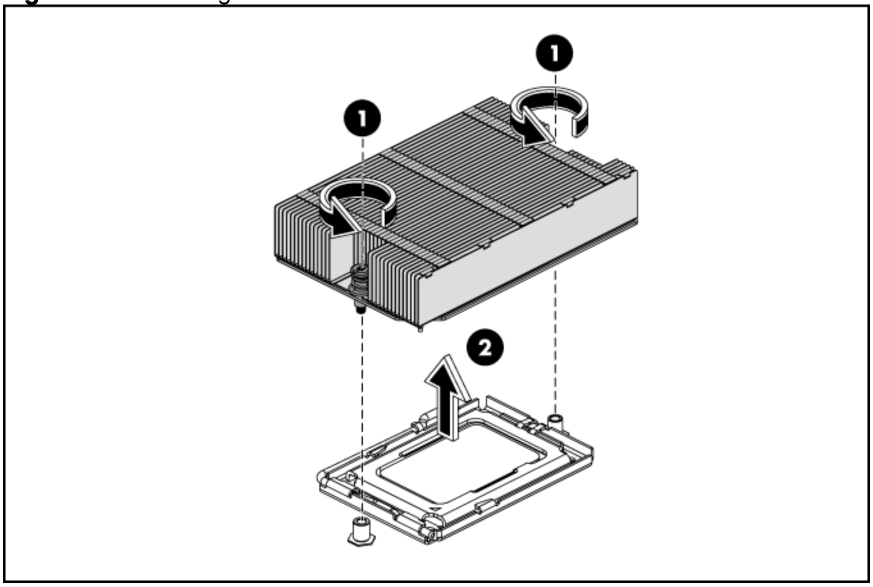
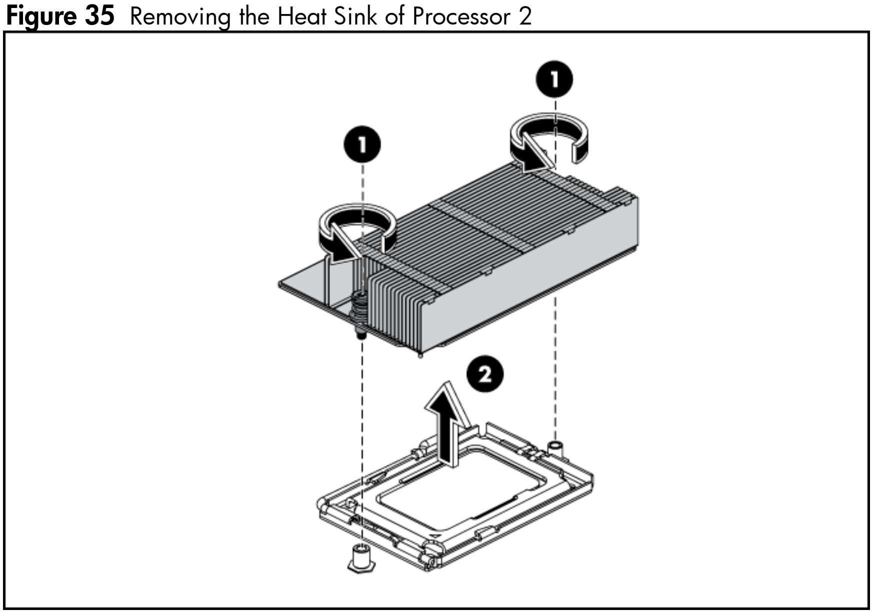


Figure 35 Removing the Heat Sink of Processor 2



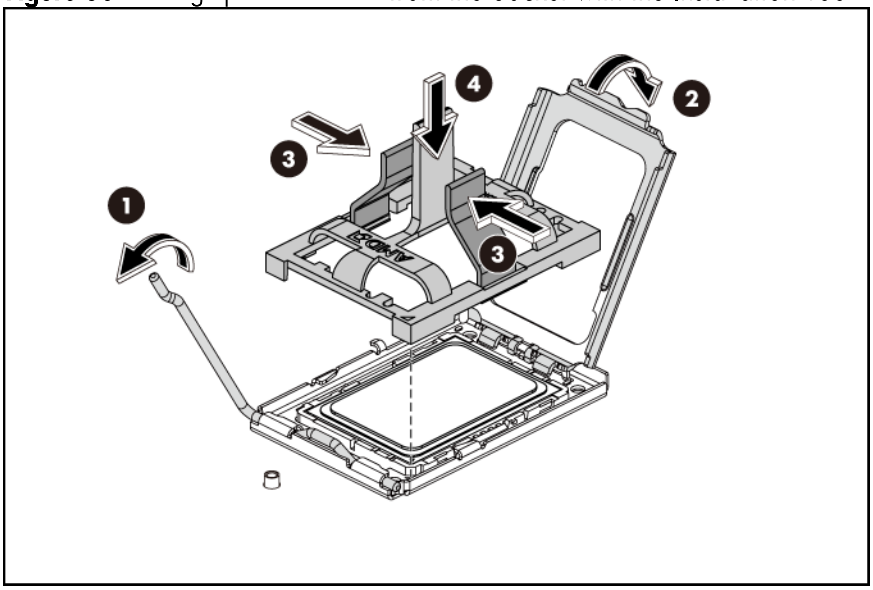
IMPORTANT: If the heat sink has been removed for any reason on a previously installed processor, it is critical that you remove any residual thermal compound using the provided alcohol pads and apply more grease compound to the integrated heat spreader on the processor to ensure proper thermal bonding between the processor and the heat sink.

CAUTION: Do not over-tighten the spring-loaded screws to prevent them from breaking off. A maximum torque of 6 inch-lb is set for each screw. Rotate the heat sink a few degrees to the left and right to break the bonding of the thermal grease compound before removing the heat sink from the processor.

To remove the processor:

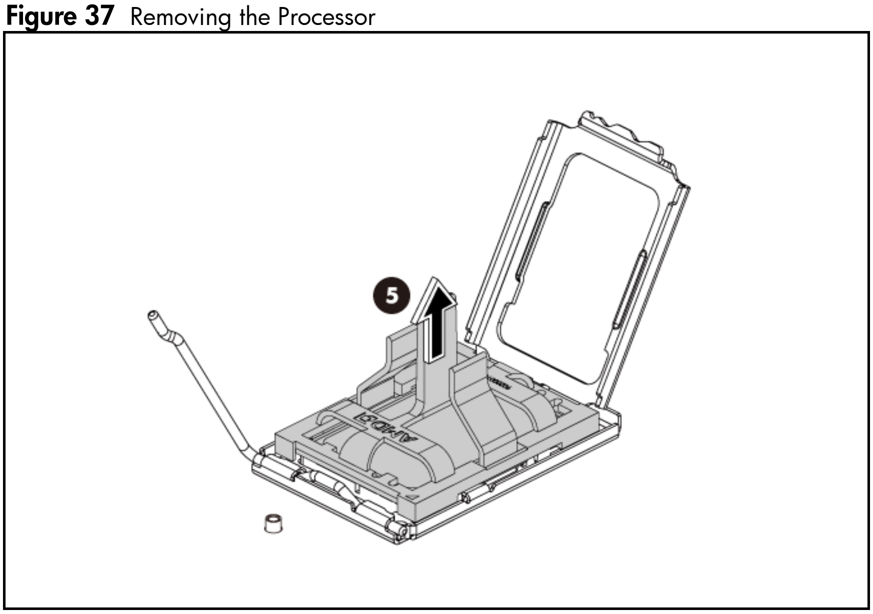
1. Unlock the load lever and lift it up.
2. Open the retention plate.
3. Squeeze the push fingers of the processor installation tool.
4. Hold the processor with the installation tool.

Figure 36 Picking up the Processor from the Socket with the Installation Tool



5. Remove the processor with the installation tool.

Figure 37 Removing the Processor



NOTE: If the processor installation tool is not included, grasp the processor by its edges and lift it out of the socket.

△ **CAUTION:** The pins of the socket are very fragile. Do not bend or damage them.

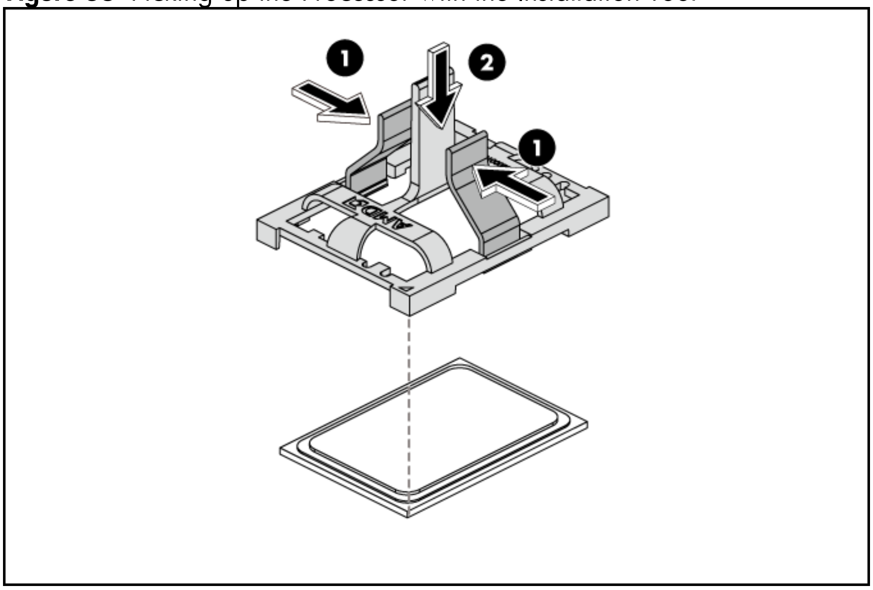
△ **CAUTION:** Place the processor on a static-dissipating work surface or in an anti-static bag.

⚠ **CAUTION:** To allow heat sink to draw as much heat as possible from the processor base, there must be good contact between the heat sink base and the top of the processor. To ensure good contact, you must apply thermal grease compound.

To install the new processor:

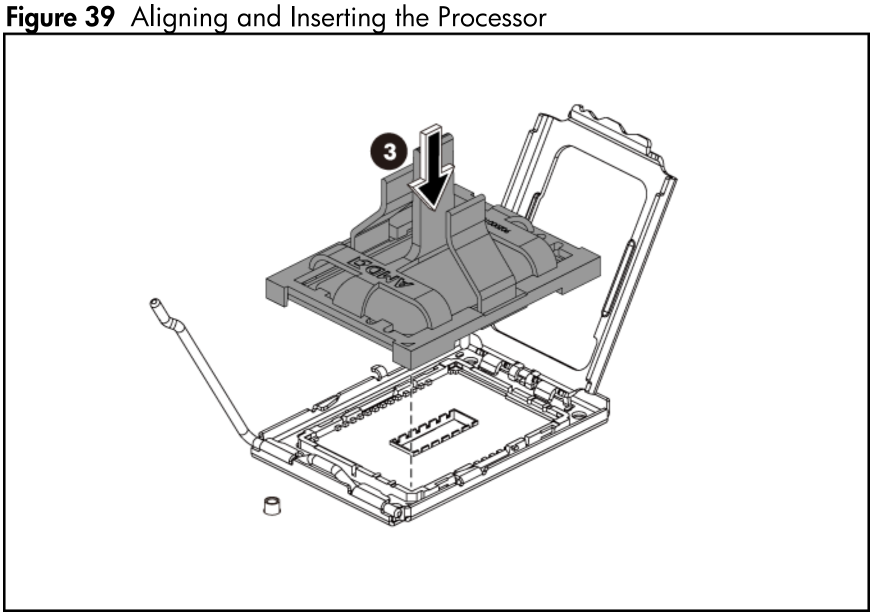
1. Squeeze the push fingers of the processor installation tool.
2. Align the tool on the processor; release the push fingers and hold the processor.

Figure 38 Picking up the Processor with the Installation Tool



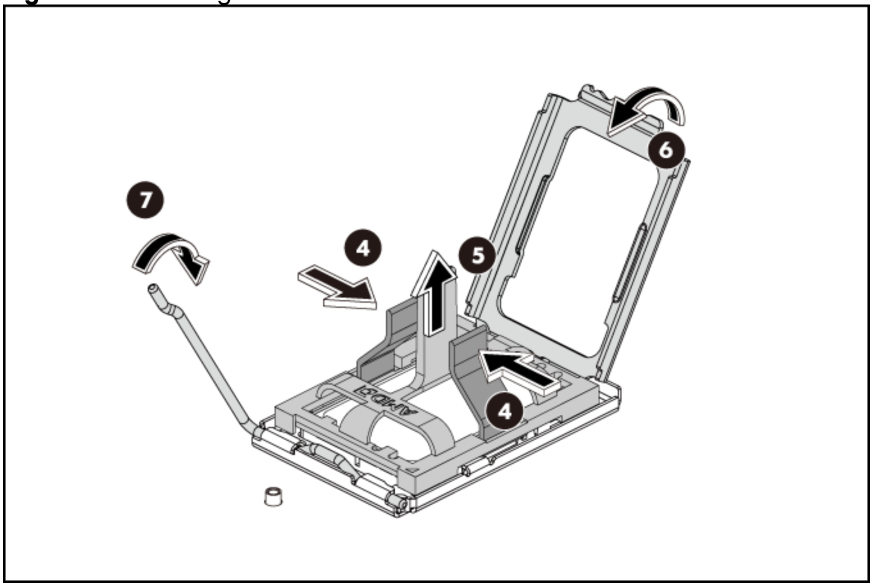
3. Insert the processor into the socket.

Figure 39 Aligning and Inserting the Processor



4. Squeeze the push fingers of the processor installation tool to release the processor.
5. Remove the processor installation tool.
6. Engage the retention plate.
7. Engage the load lever.

Figure 40 Installing the Processor



NOTE: If the processor installation tool is not included, grasp the processor by its edges and install it into the socket.

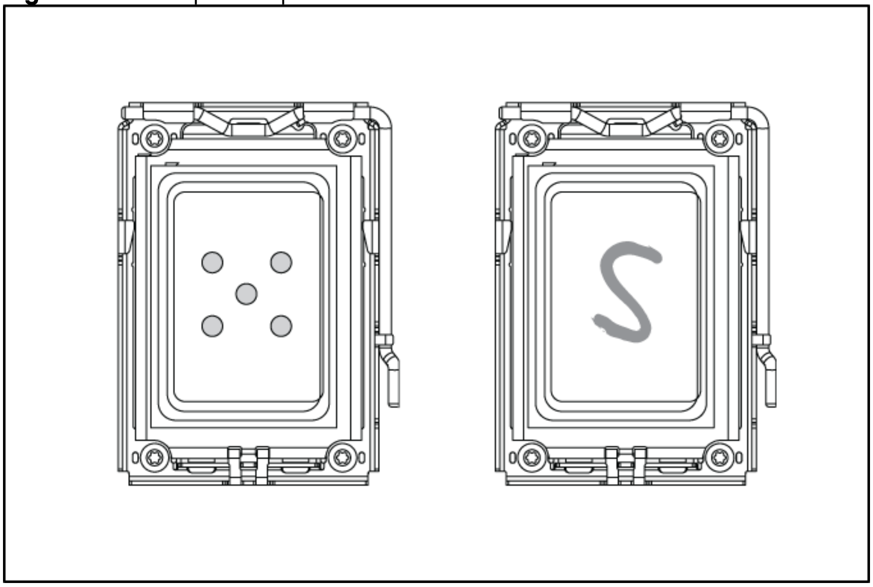
△ **CAUTION:** With the load lever and the retention plate disengaged, hold the processor by its edges and align it over the empty processor socket. Make sure that you properly align the processor with the orientation notch on the socket.

To apply the thermal grease compound:

1. Use a clean cloth dipped in rubbing alcohol to clean the contact surface on the heat sink and the new processor. Wipe the contact surfaces several times to make sure that no particles or dust contaminants are evident.
2. Apply the thermal grease compound to the integrated heat spreader on the processor in one of the following patterns to insure even distribution.

△ **CAUTION:** HP recommends using Shin-Etsu X-23-7783D thermal grease compound for your ProLiant server. Apply the grease to the top of the processor in either a 5 “Dot” or “S” shaped pattern. Ensure even distribution.

Figure 41 The top of the processor



CAUTION: Never touch the bottom of the processor; any contaminant could prevent the mounting pads from making contact with the socket.

CAUTION: Applying too much grease creates a gap between the contact surfaces, significantly reducing the ability of the heat sink to draw out heat. Installing the heat sink with excessive grease can also cause the grease to spread over the processor pins or the system board base, which can cause electrical shorts that damage the system.

CAUTION: To prevent overheating or a possible system crash, use only a heat sink model specified for the HP ProLiant DL165 G7 server.

To install the heat sink:

1. Properly align the heat sink spring-loaded screws to the system board mounting holes.
2. Tighten the spring-loaded screws clockwise to secure the heat sink connection to the system board.

Figure 42 Installing the Heat Sink of Processor 1

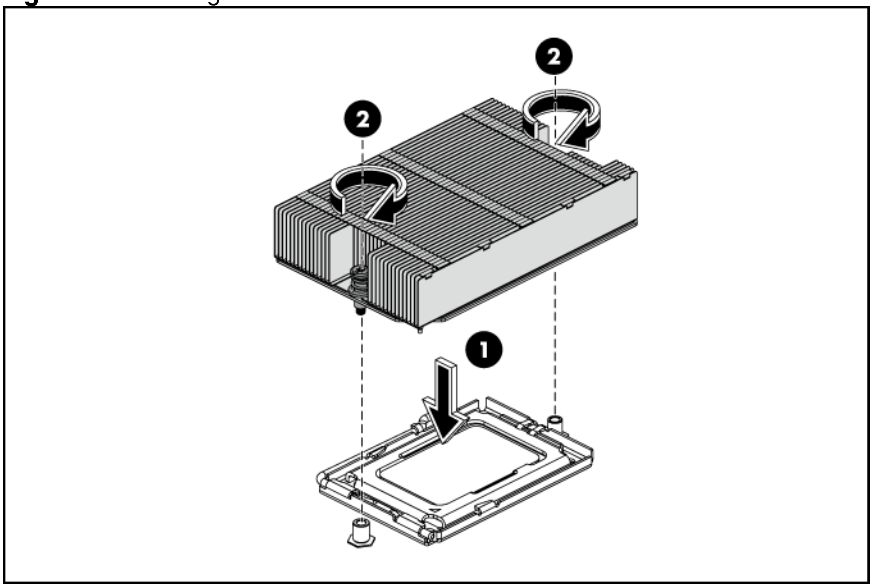
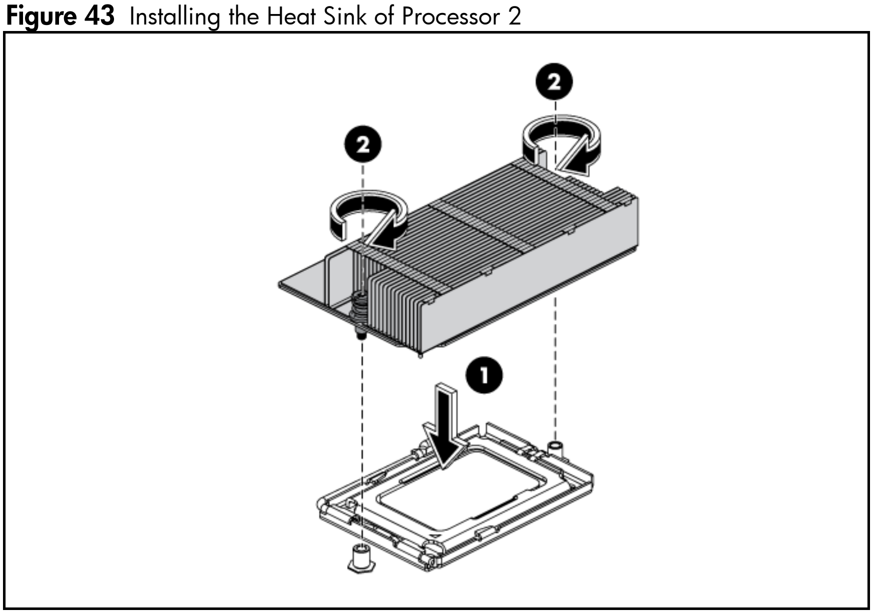


Figure 43 Installing the Heat Sink of Processor 2



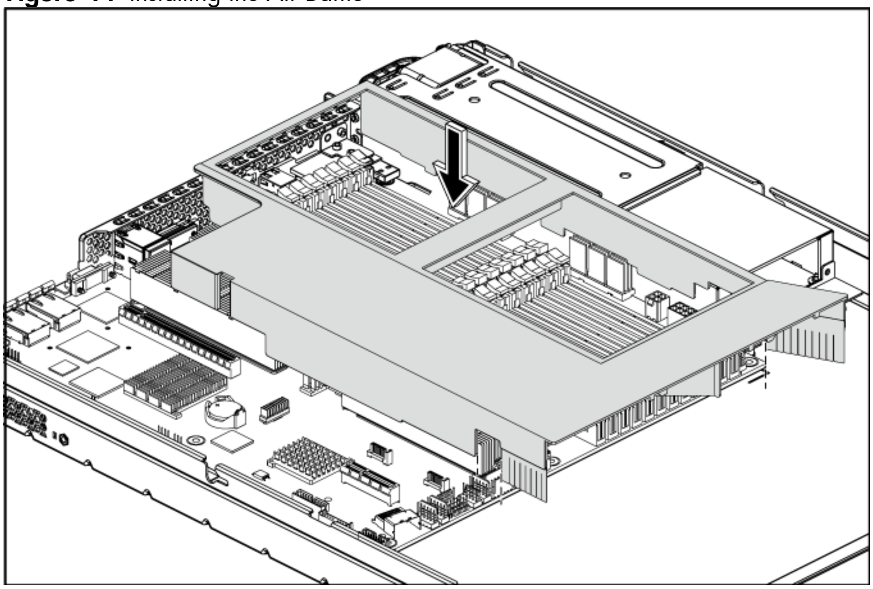
△ **CAUTION:** When installing two heat sinks, please put the heat sinks with the 27-fin side facing the DIMMs.

△ **CAUTION:** For proper cooling, do not operate the server without the top cover, air baffle, expansion slot covers, or blanks installed. For additional information, see the user guide. If hot-plug components are supported, minimize the amount of time the top cover is removed.

To install the air baffle:

1. Connect all necessary cables.
2. Gently place the air baffle on the system board.

Figure 44 Installing the Air Baffle



Memory

Each system board has twenty-four DIMM slots that support up to 192 GB maximum system memory (8 GB in each of the twenty-four DIMM slots).

You must adhere to the following guidelines when adding or replacing memory modules:

- For 2P system, both physical processors must be of the same type and speed.
- Use DDR3 RDIMM/UDIMM.
- Support single-rank, dual-rank, and quad-rank DIMM.

Memory module population order												
Processor memory socket	1	2	3	4	5	6	7	8	9	10	11	12
Rank support per memory socket	SR/DR	SR/DR/ QR	SR/DR	SR/DR	SR/DR/ QR	SR/DR	SR/DR	SR/DR/ QR	SR/DR	SR/DR	SR/DR/ QR	SR/DR
RDIMM Population order without QR	A	I	E	C	K	G	B	J	F	D	L	H
UDIMM Population order without QR	A		E	C		G	B		F	D		H
Population order with QR along with SR/DR	E	A	I	G	C	K	F	B	J	H	D	L
Processor memory bank number	1	3	2	1	3	2	1	3	2	1	3	2

NOTES:

SR = Single Rank, DR = Dual Rank, QR = Quad Rank.

Population rules must be followed for both processors. DIMMs must be populated in alphabetic order (A, B, C…) as indicated in the matrix.

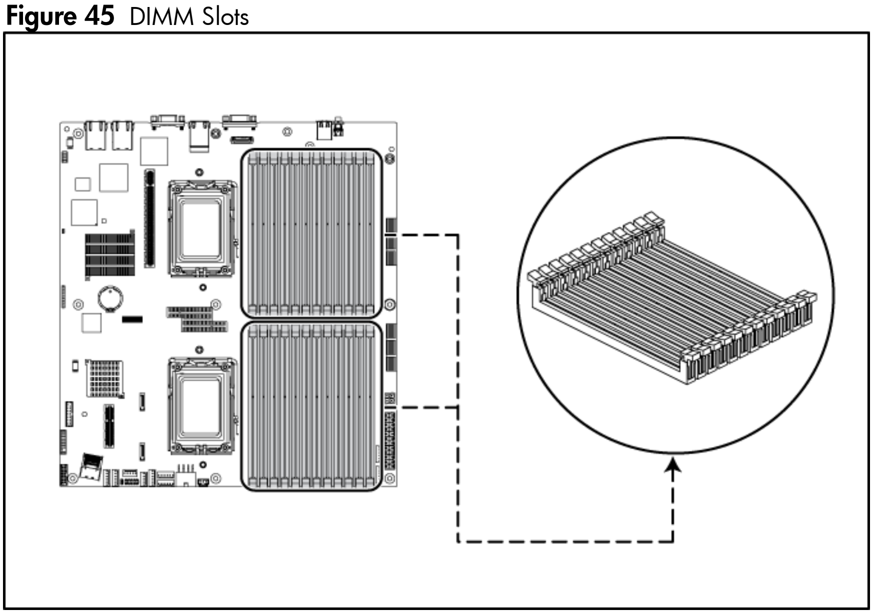
Memory modules may be populated one at a time per processor, but populating two at a time per processor provides better performance.

Memory modules should be populated four at a time per processor for best performance.

Memory modules within a memory bank must be identical for best performance.

Quad Rank memory module can only be installed in memory sockets 2, 5, 8, and 11.

Figure 45 DIMM Slots

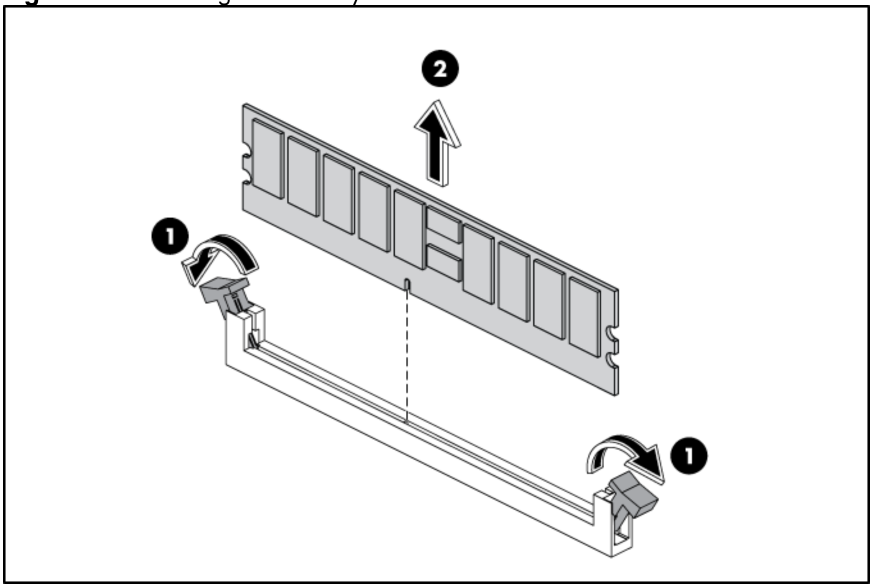


NOTE: Before installing the memory, remove the air baffle first. For a detailed procedure, see the ”Processor” section in this chapter.

To remove the memory module:

1. Completely open the holding clips securing the memory module.
2. Gently pull the memory module upward to remove it from the slot.

Figure 46 Removing the Memory Module

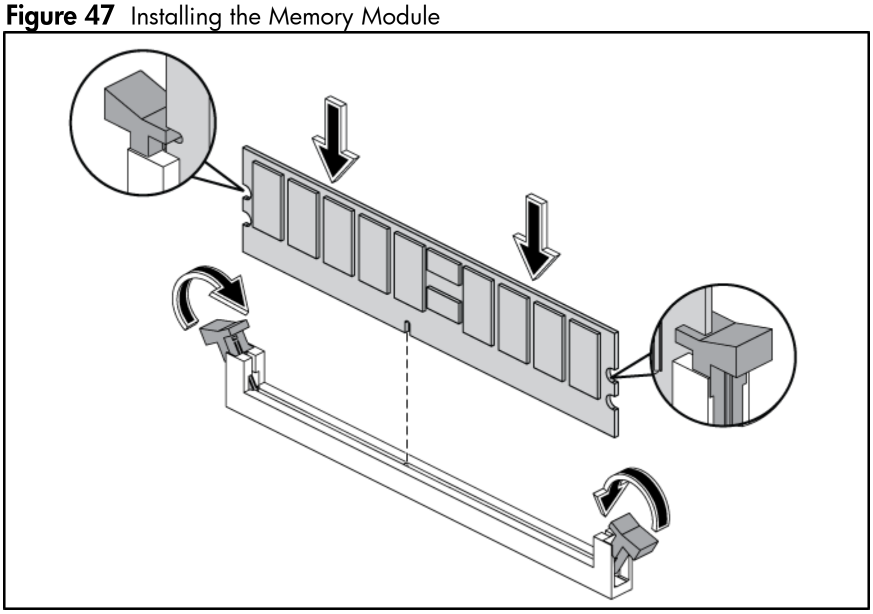


⚠ **CAUTION:** Place the memory module on a static-dissipating work surface or inside of an anti-static bag.

To install the memory module:

1. Align the notch on the bottom edge of the memory module with the keyed surface of the DIMM slot and then fully press the memory module into the slot until the holding clips snap back in place.

Figure 47 Installing the Memory Module



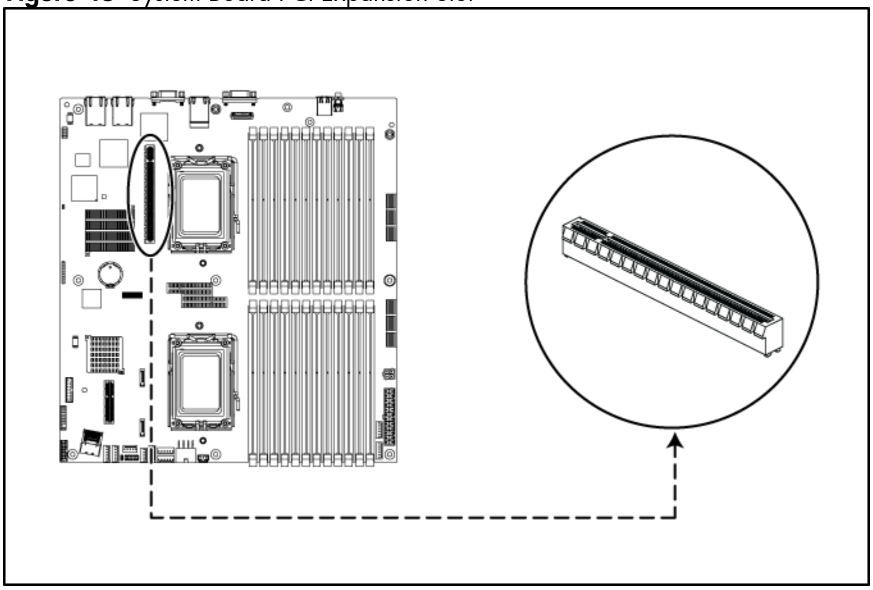
⚠ **CAUTION:** The DIMM slots are structured to ensure proper installation. If you insert a DIMM but it does not fit easily into the slot, you may have inserted it incorrectly. Reverse the orientation of the DIMM and insert it again.

PCI expansion card

System board PCI expansion slot

There is one PCI expansion slot on the system board.

Figure 48 System Board PCI Expansion Slot

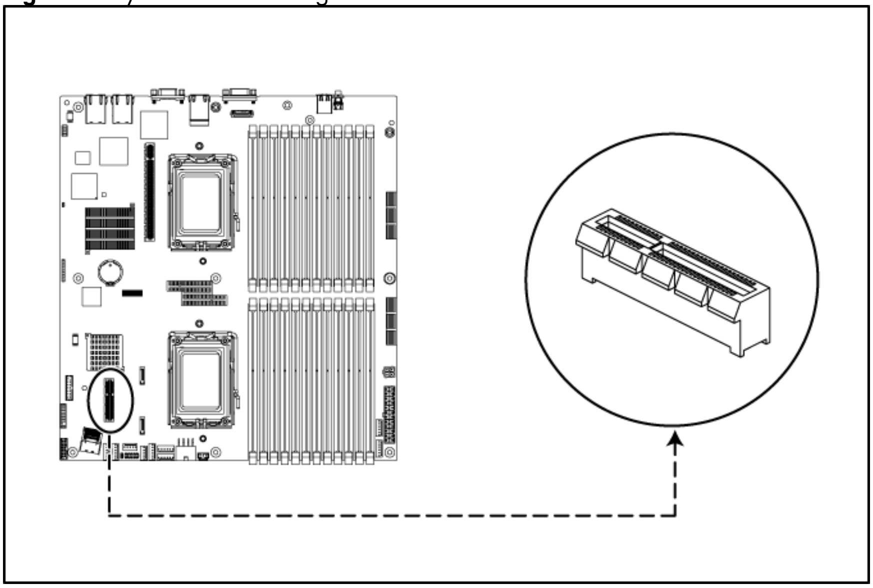


Item	Component Designator	Component	Function
1	J30	PCIe X16 (LP) slot 1	Support a PCIe riser card

System board storage card slot

There is one storage card slot on each system board.

Figure 49 System Board Storage Card Slot

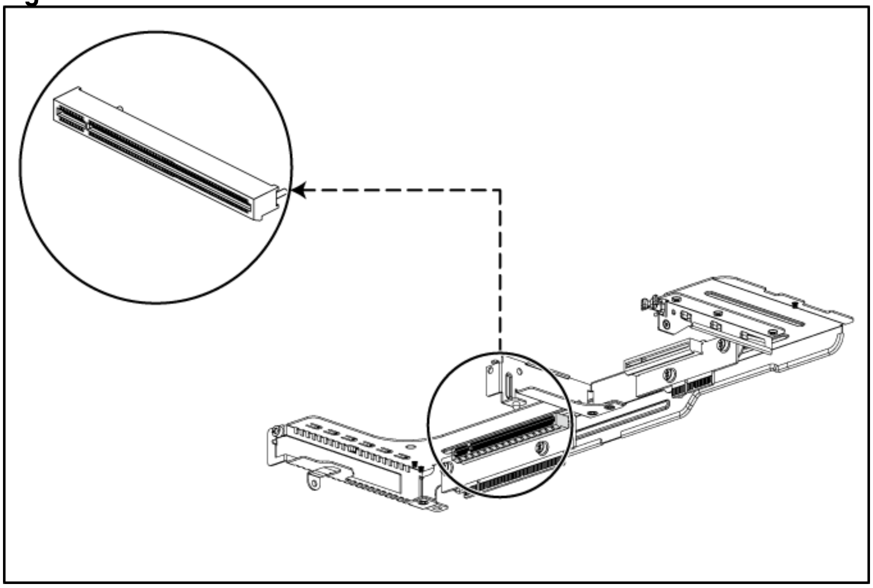


Component Designator	Component	Function
J78	PCIe x4 (LP) slot (storage card slot)	Supports a PCIe riser card

PCI riser card expansion slot

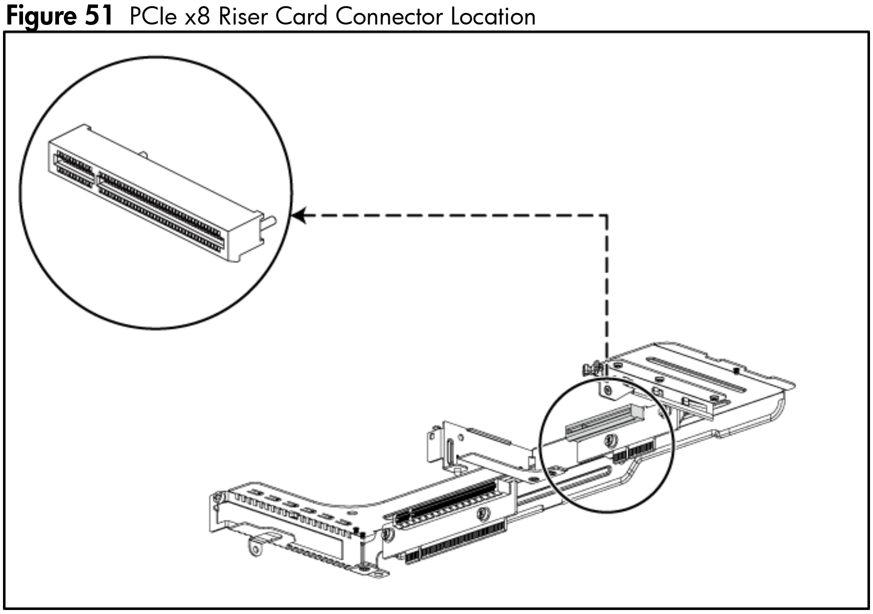
The two PCIe riser card attached to the PCI cage convert the functionality of the system board expansion slot to the slot positioned at a 90° angle from the system board.

Figure 50 PCIe x16 Riser Card Connector Location



- Single-slot PCIe riser card (x16 link with x16 slot)

Figure 51 PCIe x8 Riser Card Connector Location



- Single-slot PCIe riser card (x4 link with x8 slot)

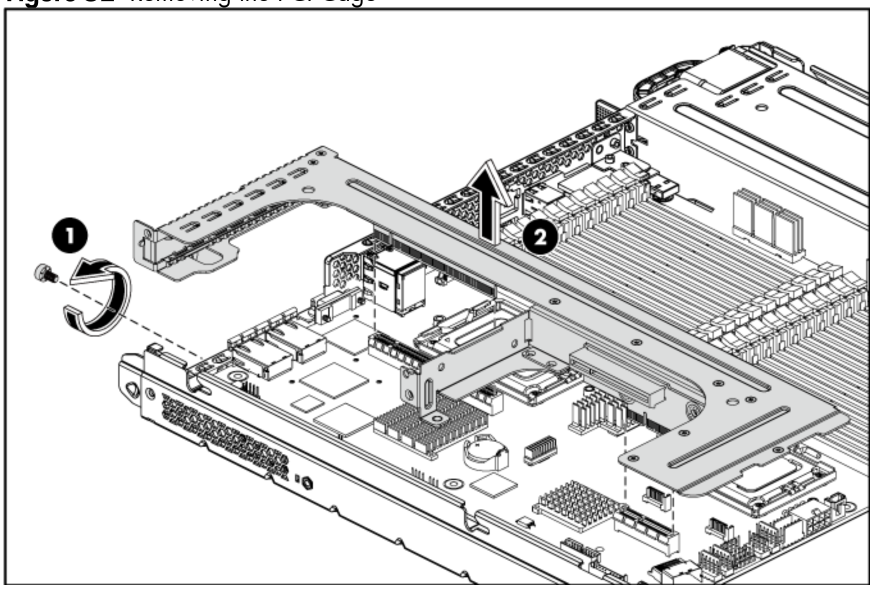
PCI cage

To remove the PCI cage:

NOTE: Disconnect all cables connecting an existing expansion board to the system board.

1. Loosen the four screws that secure the PCI cage to the system board tray.
2. Lift the PCI cage away from the system board assembly.

Figure 52 Removing the PCI Cage



Installing PCIe riser cards

The system supports up to two riser cards at a time. Use only HP supported expansion boards that meet the following specifications:

- Compliance
  - PCIe x16
  - PCIe x8
- Form Factor
  - Low Profile

To remove the PCIe riser card:

1. Loosen the two screws securing the riser card to the PCI cage.
2. Remove the riser card from the PCI cage.

Figure 53 Removing the PCIe x16 Riser Card

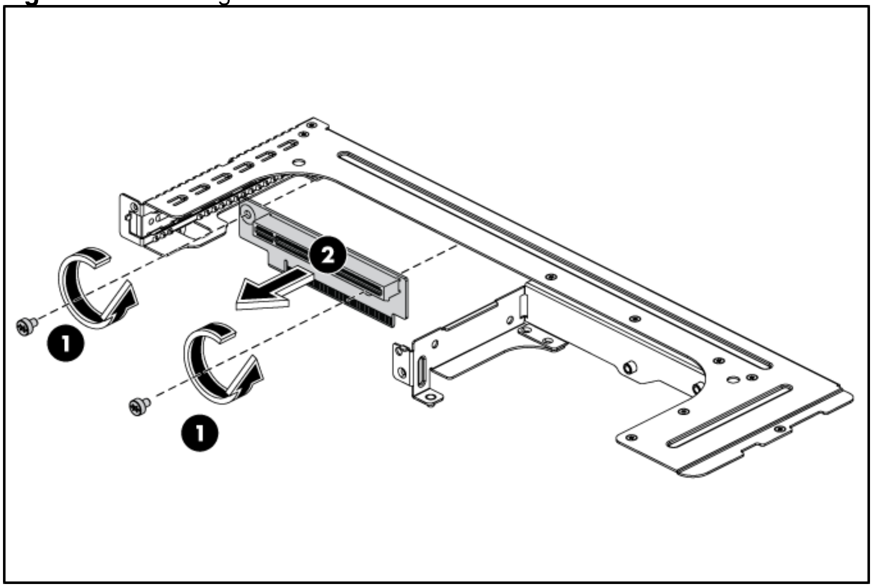
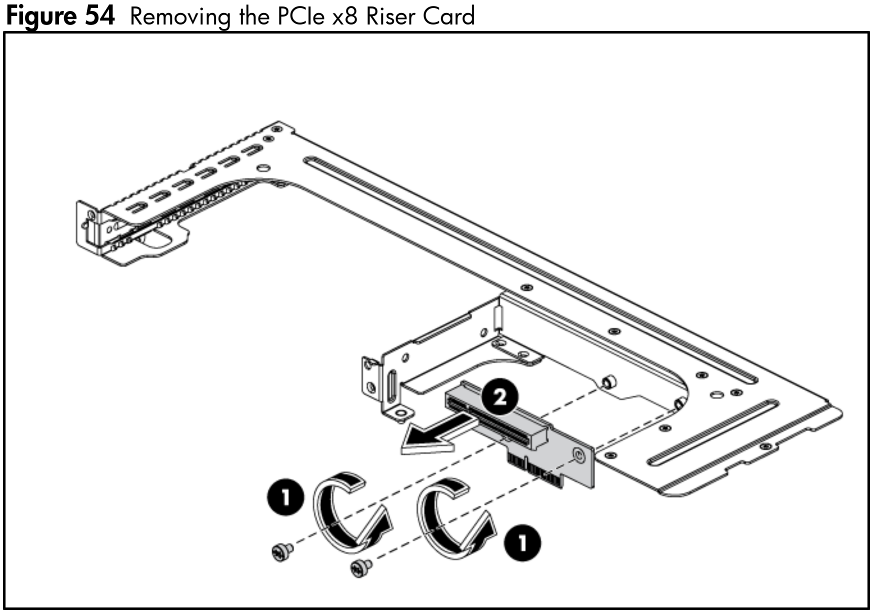


Figure 54 Removing the PCIe x8 Riser Card



To install the PCIe riser card:

1. Align the screw holes on the riser card to the screw holes on the PCI cage.
2. Install and tighten the screws that secure the riser card to the PCI cage.

Figure 55 Installing the PCIe x16 Riser Card

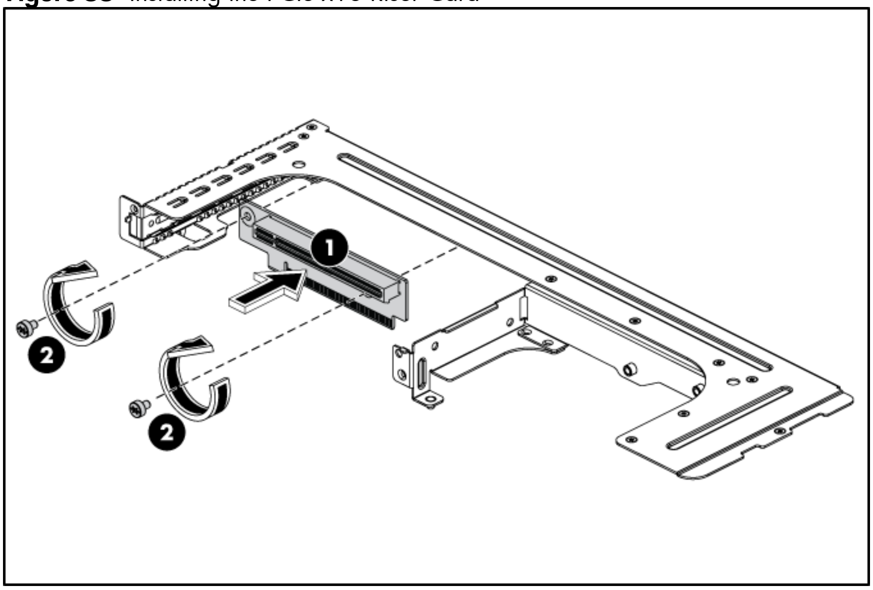
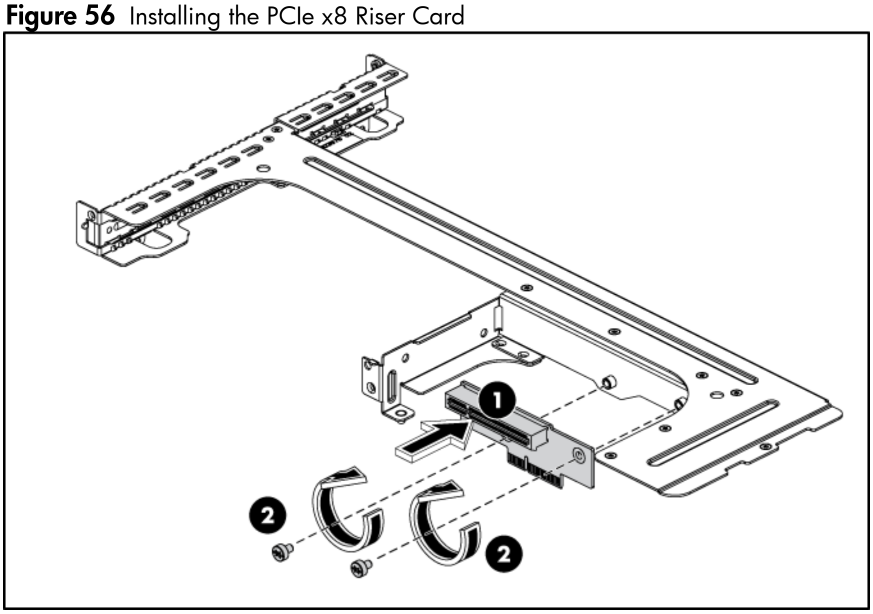


Figure 56 Installing the PCIe x8 Riser Card



To install the PCI expansion board:

1. Remove the slot cover from the PCI cage.
2. Slide the expansion board into the slot, aligning the board with its matching connector.

   Firmly press the board to seat it properly on the slot.
3. Fasten the screw to secure it.

Figure 57 Installing the PCI Expansion Board

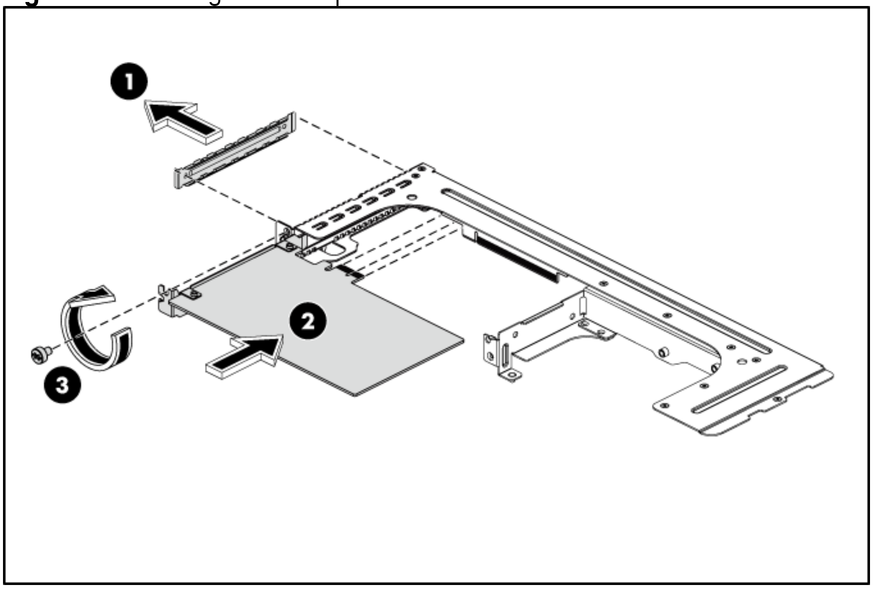
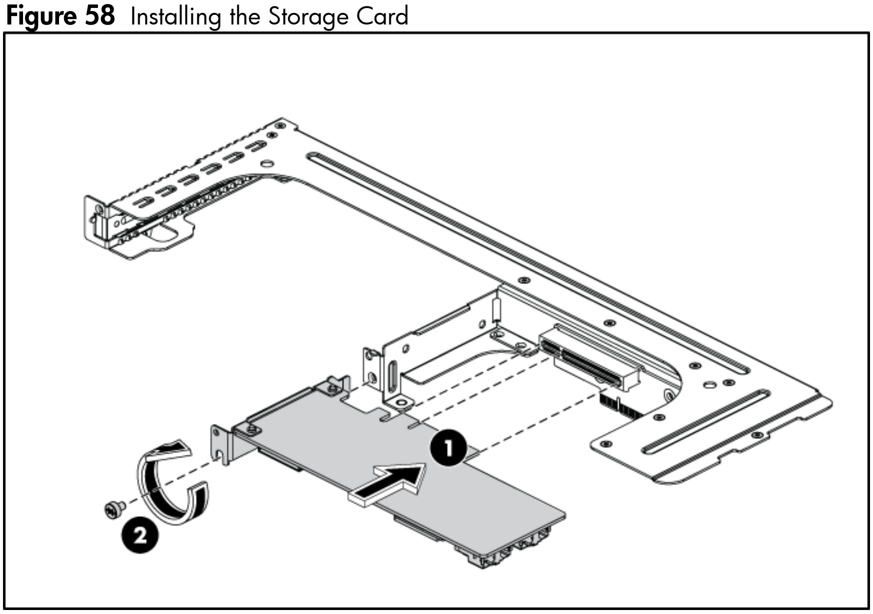


Figure 58 Installing the Storage Card



⚠ **CAUTION:** Do not discard the slot cover. If the expansion board is removed in the future, the slot cover must be reinstalled to maintain proper cooling.

Table 10 HP Smart Array Controller Spare Parts List

Item	Description	Spare Part Number	Customer Self Repair
1	HP Smart Array P212 Controller	462594-001	Mandatory
2	HP Smart Array P410 Controller	462919-001	Mandatory
3	HP Smart Array P411 Controller	462918-001	Mandatory
4	HP Smart Array P812 Controller	587224-001	Mandatory

Table 11 HP Smart Array Cache Module Spare Parts List

Item	Description	Spare Part Number	Customer Self Repair
1	Smart Array cache module, 256 MB (Smart Array P212, P410 and P411 controllers only)	462974-001	Mandatory
2	Smart Array cache module, 512 MB (Smart Array P212, P410 and P411 controllers only)	462975-001	Mandatory
3	FBWC capacitor pack	587324-001	Mandatory
4	FBWC module, 512-MB	578882-001	Mandatory
5	FBWC module, 1-GB	505908-001	Mandatory

To reinstall the PCI cage:

1. Install the PCI expansion board into the PCI cage.
   a. Align the PCI expansion board with the open expansion slot.
   b. Press the PCI expansion board into the expansion slot on the riser card.
2. Align the PCI cage to the system board expansion slot, and then press it down to ensure full connection to the system board.
3. Tighten the four screws to secure the PCI cage to the chassis.

Figure 59 Reinstalling the PCI Cage with PCI Expansion Board

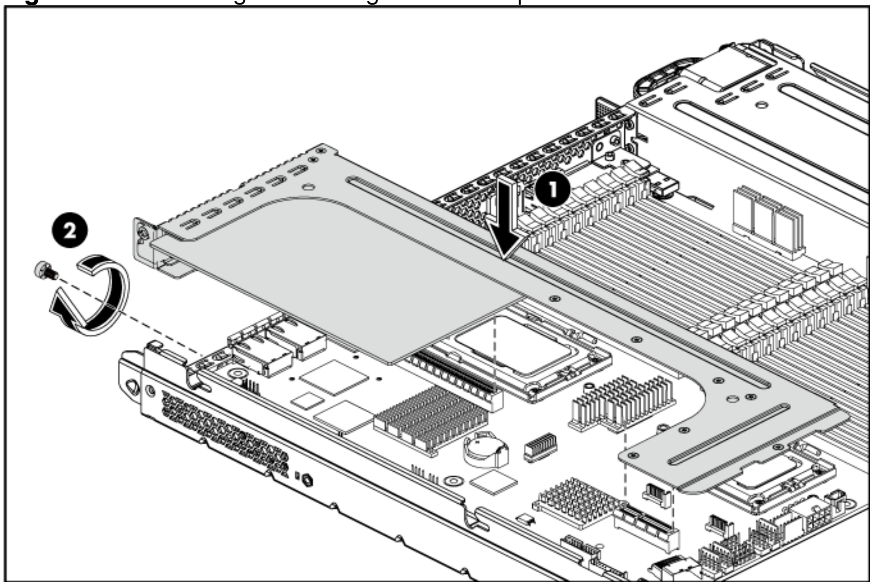
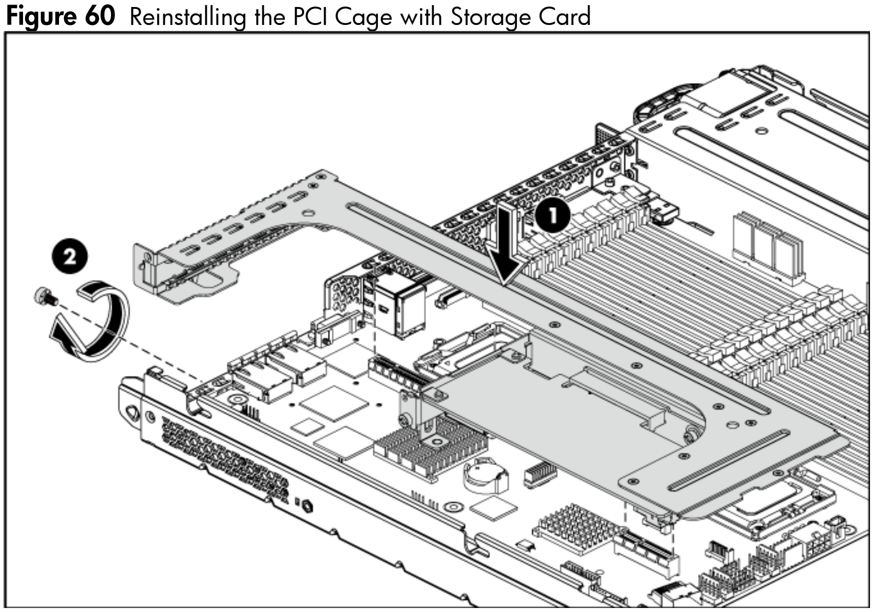


Figure 60 Reinstalling the PCI Cage with Storage Card



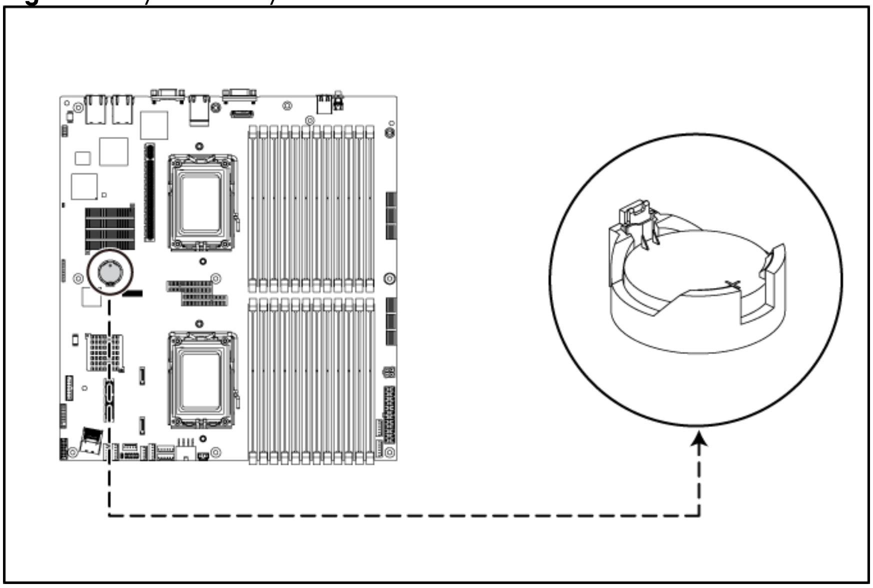
4. Connect the necessary cable(s) to the system board.

System battery

The server uses nonvolatile memory that requires a system battery to retain system information when power is removed.

This 3 V lithium coin cell battery is located on the system board.

Figure 61 System Battery Location



WARNING: Note the following reminders when replacing the system battery:

- Replace the system battery with the same type as the system battery recommended by HP. Use of another system battery may present a risk of fire or explosion.
- A risk of fire and chemical burn exists if the system battery is not handled properly. Do not disassemble, crush, puncture, or short external contacts, or expose the system battery to temperatures higher than 60°C (140°F).
- Do not dispose of used system battery in water or fire. Dispose of used system battery according to manufacturer's instructions.

CAUTION: Loss of BIOS settings occurs when the system battery is removed. You must reconfigure BIOS settings whenever you replace the system battery.

NOTE: If the server no longer automatically displays the correct date and time, you may need to replace the system battery. Under normal usage, system battery life is five to ten years.

To replace the system battery:

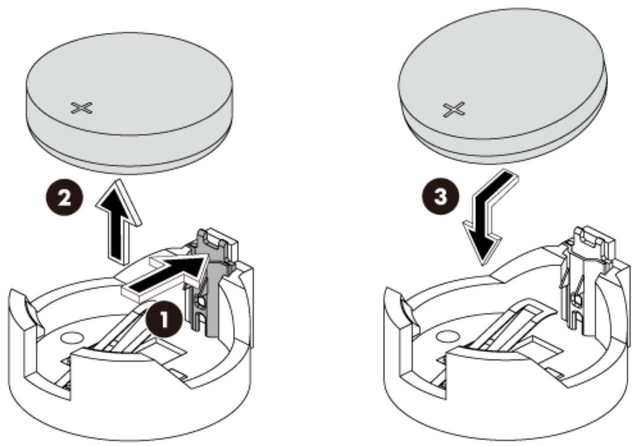
1. Power down the server.
2. Disconnect the power cord(s).
3. Unlock the server if necessary and remove the top cover as described in the section “System cover”.

NOTE: If the expansion board is installed to the PCI cage, remove the PCI cage before releasing the battery. Refer to the “PCI cage” section in this chapter for detailed procedures.

4. Release the battery from its holder by squeezing the metal clamp that extends above one edge of the battery. When the battery pops up, lift it out.

5. To insert the new battery, slide one edge of the replacement battery under the holder's lip with the positive side up. Push the other edge down until the clamp snaps over the other edge of the battery.

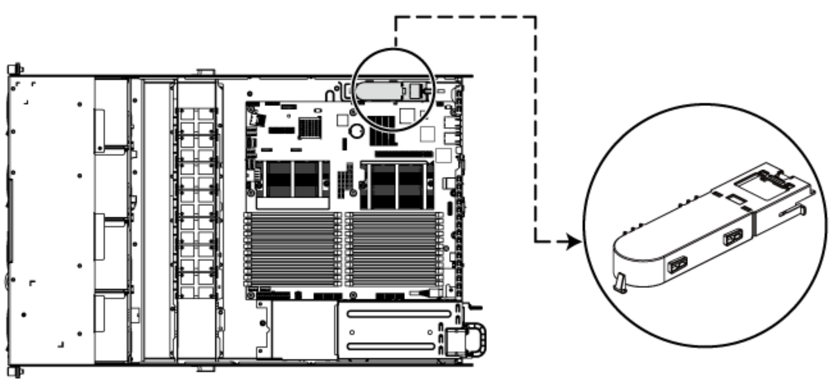
Figure 62 Replacing the System Battery



BBWC (Optional)

This server can support a BBWC. The BBWC is optional for the shipment.

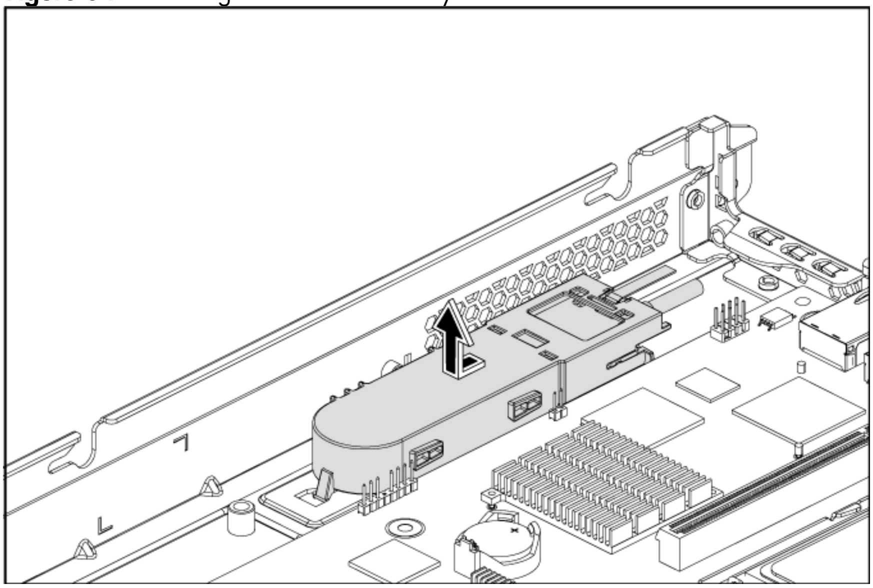
Figure 63 BBWC Location



To remove the BBWC assembly:

1. Push the tab that secures the BBWC assembly to the system board tray.
2. Slide the BBWC assembly, and then lift it out of the system board assembly.

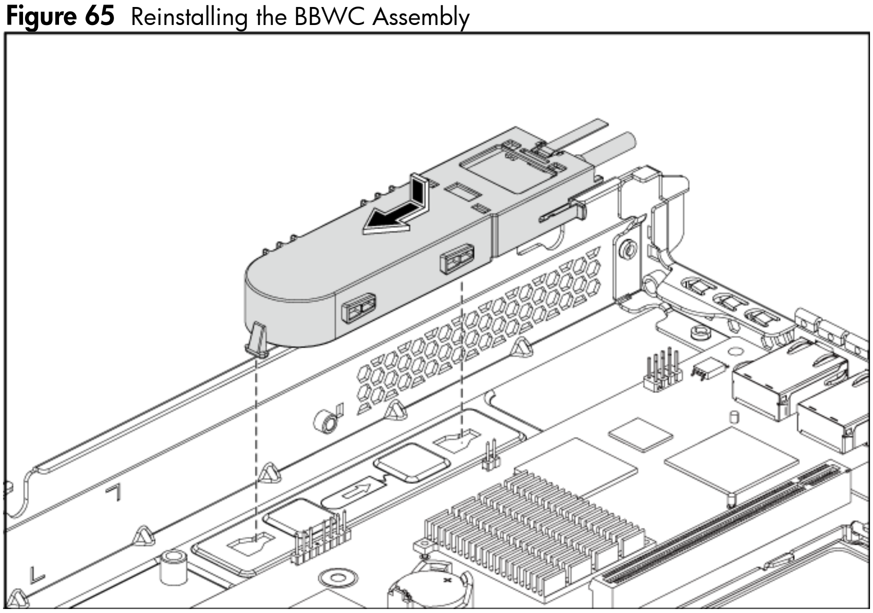
Figure 64 Removing the BBWC Assembly



To reinstall the BBWC assembly:

1. Align the locking tabs on the BBWC assembly to their holes on the tray.
2. Press the BBWC assembly into the tray, and then push it along the direction of the arrow to lock the locking tabs.

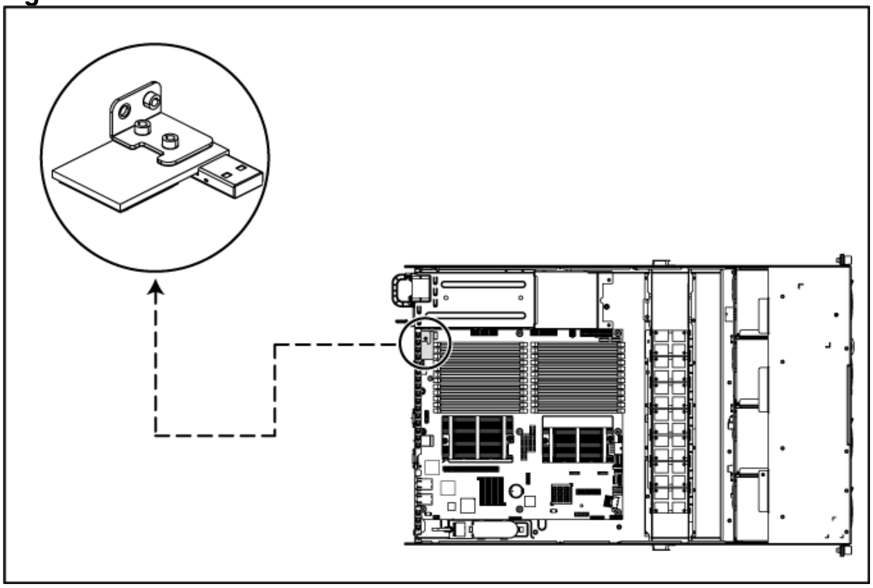
Figure 65 Reinstalling the BBWC Assembly



SD card reader module (Optional)

This server can support a SD reader module. The SD reader module is optional for the shipment.

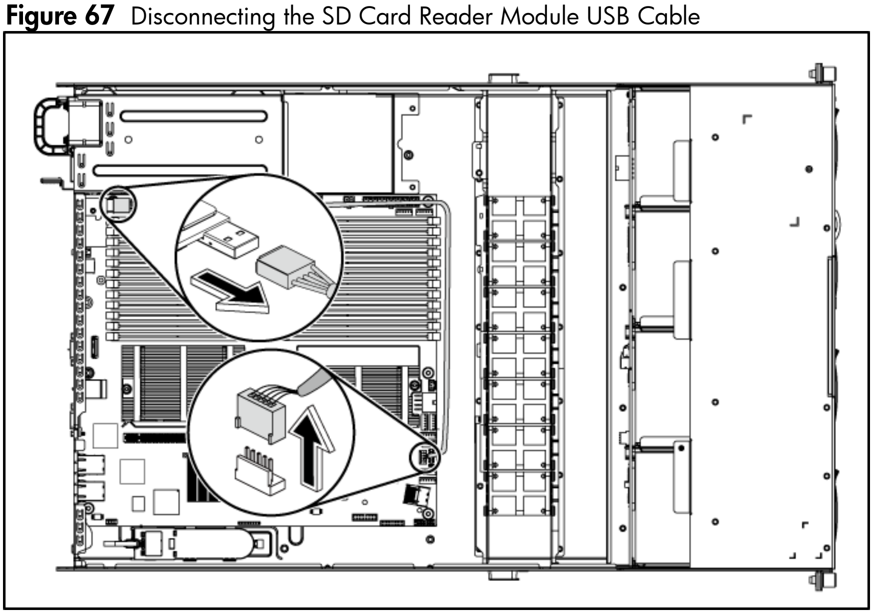
Figure 66 SD Reader Module Location



To remove the SD card reader module:

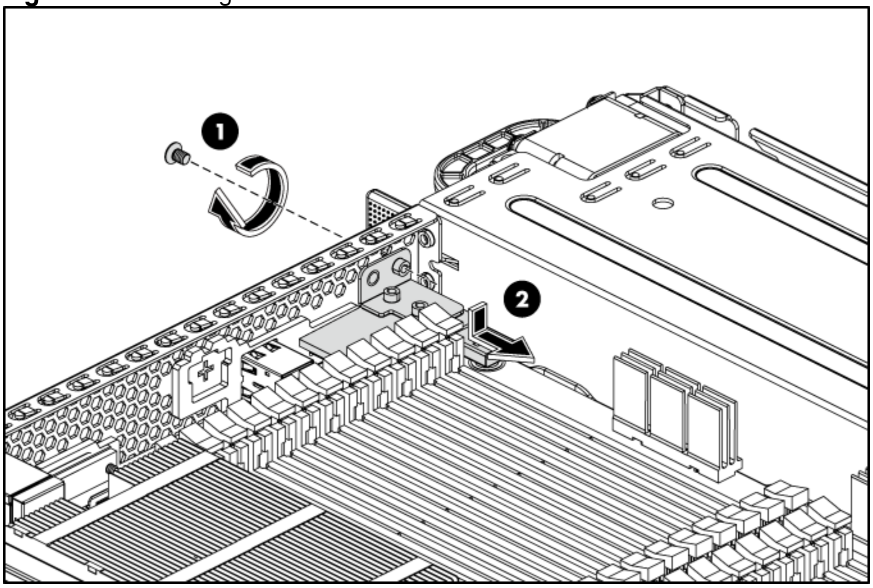
1. Disconnect the USB cable from the SD card reader module USB connector.

Figure 67 Disconnecting the SD Card Reader Module USB Cable



2. Loosen the screw that secures the SD card reader module to the chassis.
3. Remove the SD card reader module from the chassis.

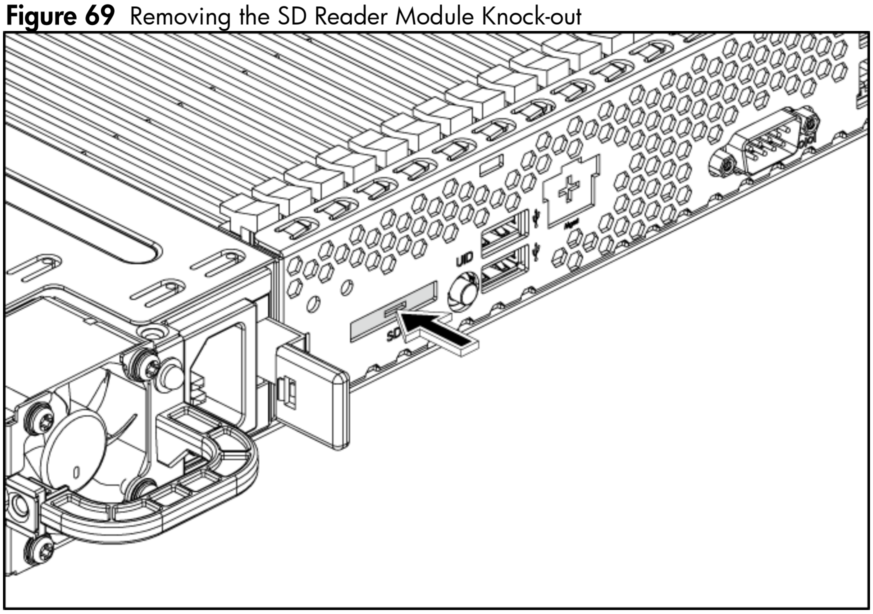
Figure 68 Removing the SD Reader Module



To reinstall the SD card reader module:

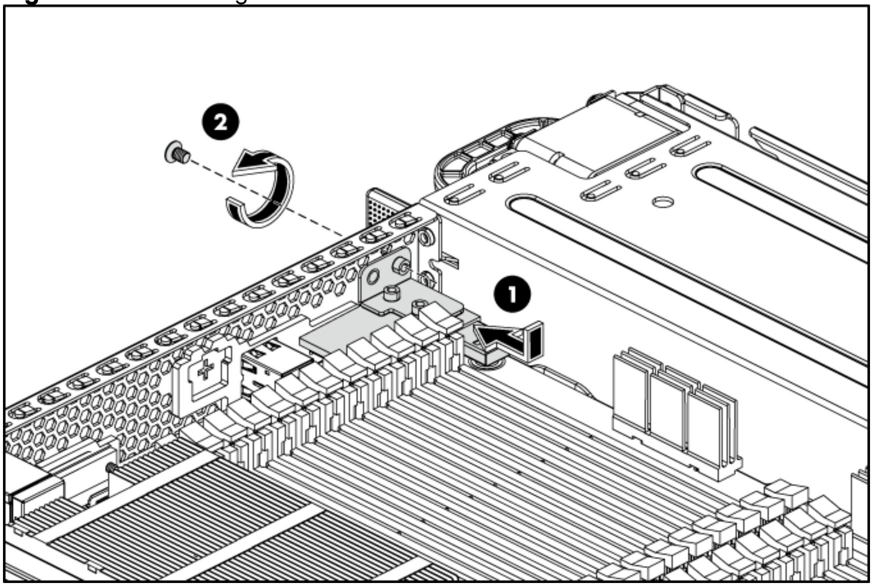
1. Remove the SD card reader module knock-out from the back panel of the server.

Figure 69 Removing the SD Reader Module Knock-out



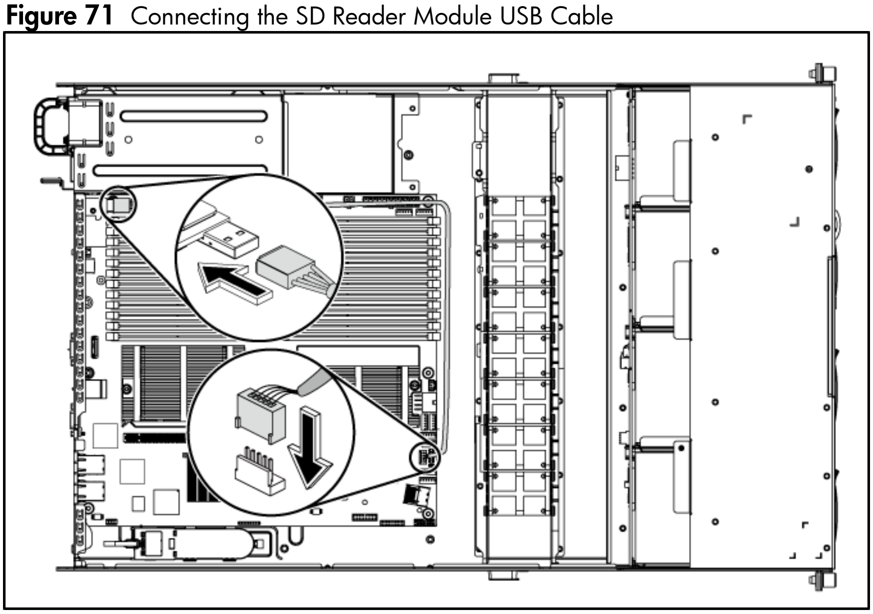
2. Align the SD card reader module to the back panel, and tighten the screw that secures the module to the chassis.

Figure 70 Reinstalling the SD Reader Module



3. Connect the USB cable to the SD card reader module USB connector and link the other side of the USB cable connector to the system board. (Refer to your system hood label for the connector locations.)

Figure 71 Connecting the SD Reader Module USB Cable

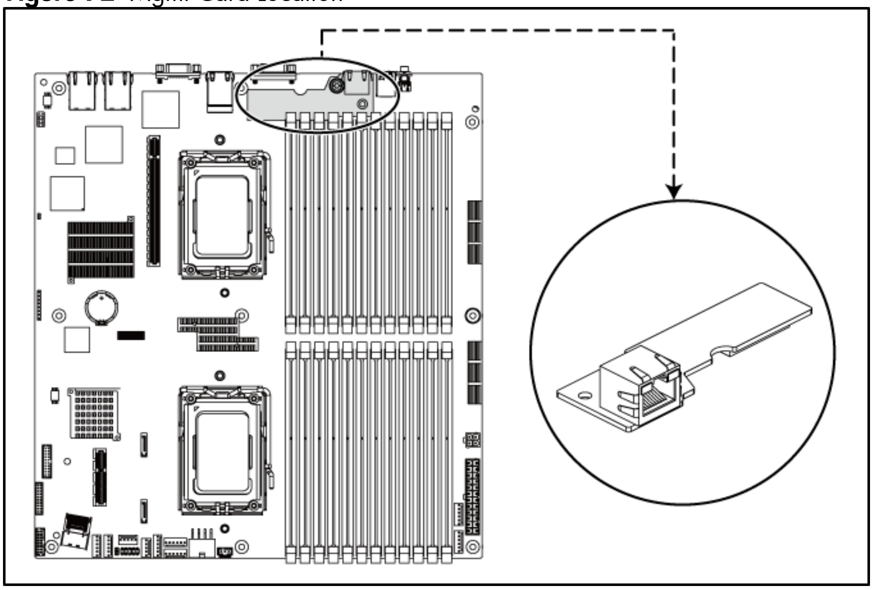


Mgmt card (Optional)

The server can support a mgmt card. The mgmt card is optional for the shipment.

The following figure shows the mgmt card location.

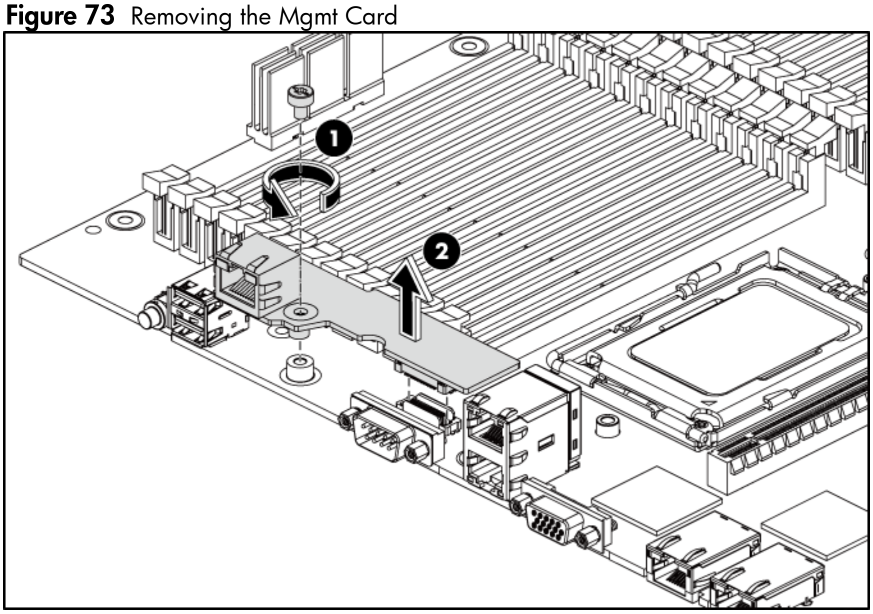
Figure 72 Mgmt Card Location



To remove the mgmt card:

1. Loosen the screw.
2. Pull the mgmt card upwards, and then remove the mgmt card from the mgmt card connector.

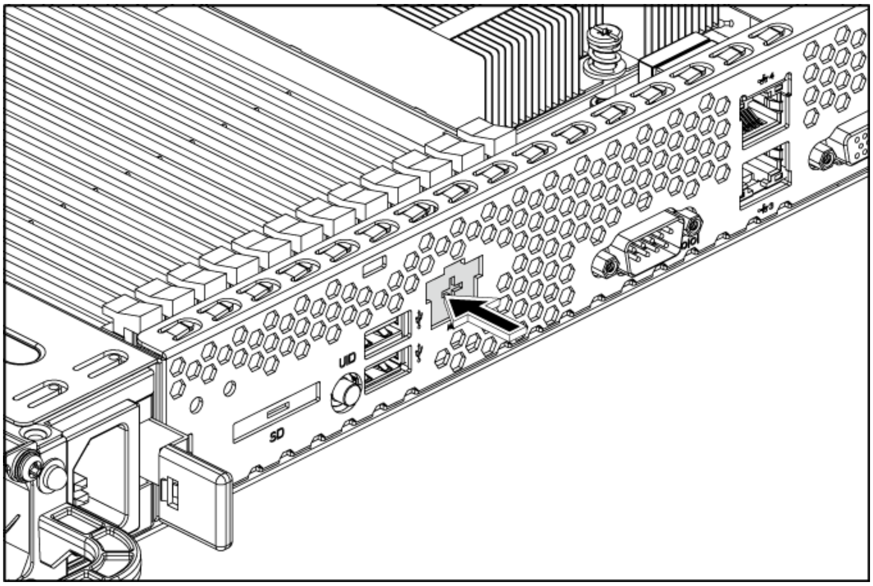
Figure 73 Removing the Mgmt Card



To reinstall the mgmt card:

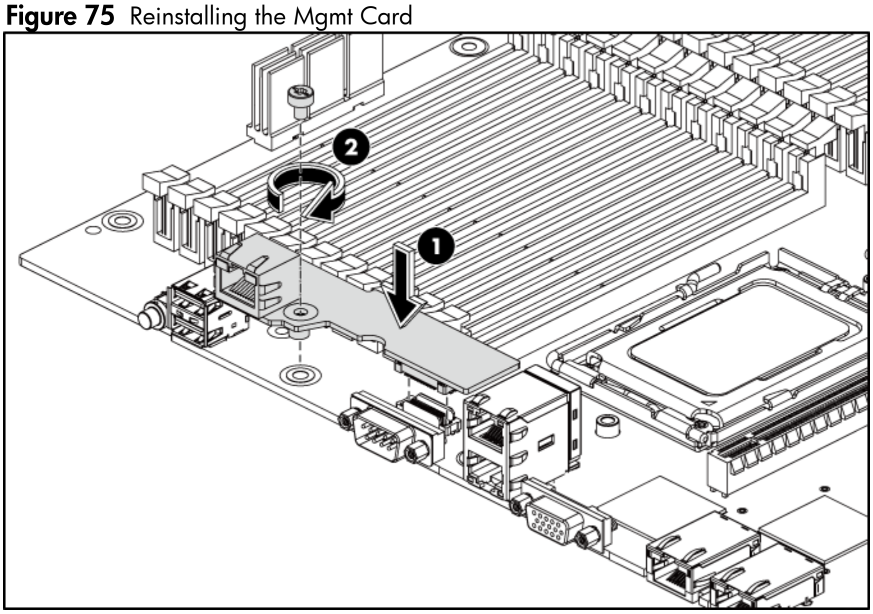
1. Remove the mgmt port knock-out.

Figure 74 Removing the Mgmt Port Knock-out



2. Insert the mgmt card into the mgmt card connector on the system board.
3. Tighten the screw clockwise to secure the mgmt card to the system board.

Figure 75 Reinstalling the Mgmt Card

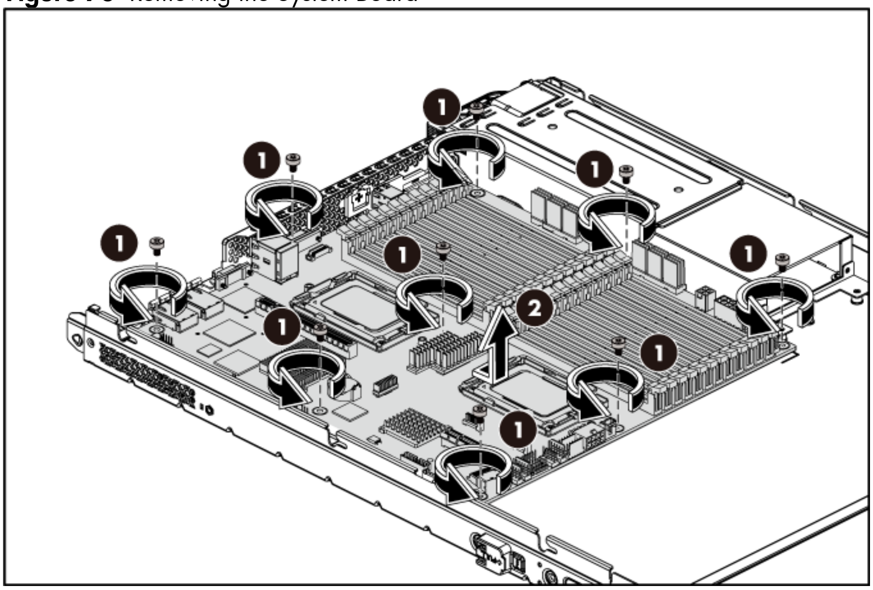


System board removal and replacement procedure

To remove the system board:

1. Remove the top cover.
2. Remove the air baffle and all cables from the system board.
3. Loosen the nine screws that secure the system board to the chassis.
4. Slide the system board back, up and out of the chassis. Remove the system board from the chassis.

Figure 76 Removing the System Board

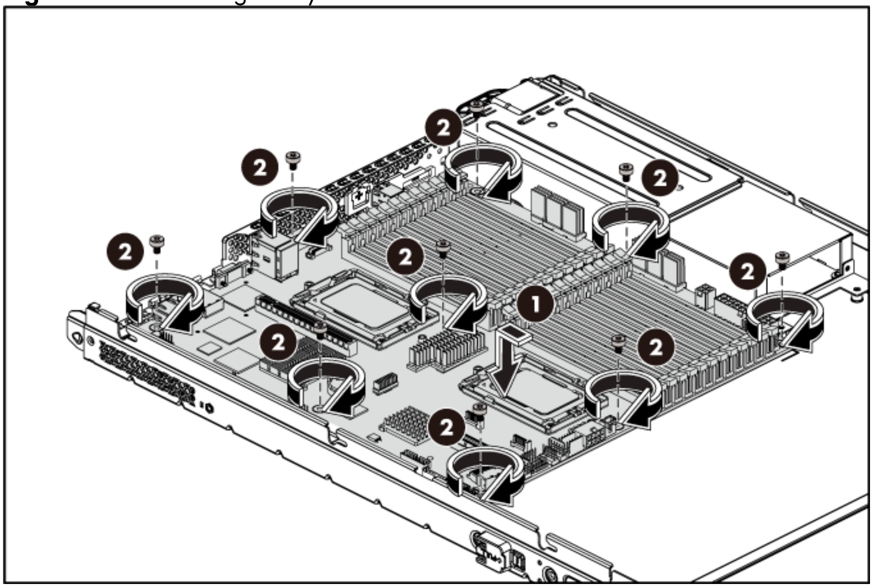


NOTE: Extreme care must be taken to ensure the system board components on the bottom of the system board not be scraped or dislodged by the screw standoffs. The sliding action requires that the rear panel should be cleared slightly and the front of the system board should be raised slightly as you move the system board towards the front and up.

To reinstall the system board:

1. Align the system board I/O connectors to their openings and slide the system board into place. The nine screw holes on the chassis should align with the system board.
2. Fasten the nine screws on the system board to secure the system board to the chassis.

Figure 77 Reinstalling the System Board

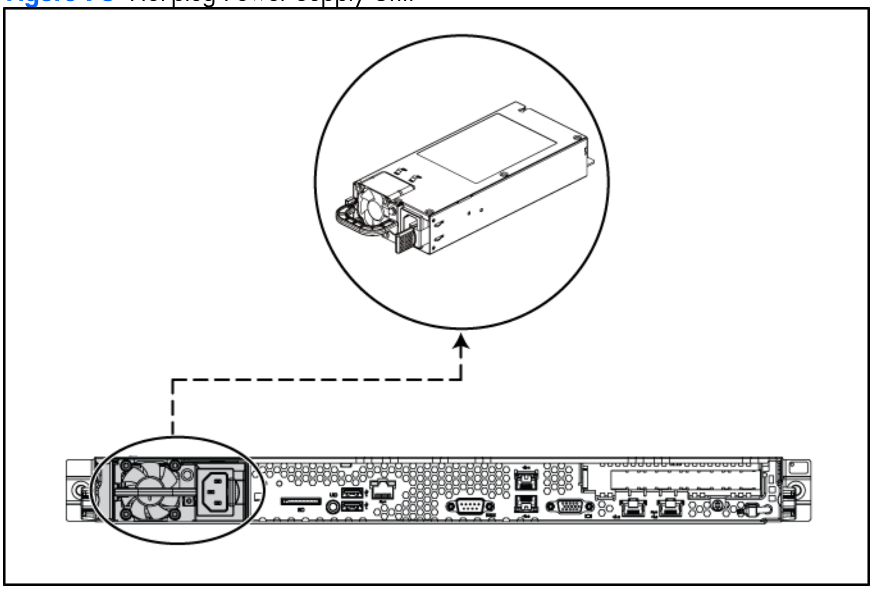


NOTE: Upon completion of replacing the system board, go to the HP website and download the latest system BIOS firmware for the DL165 G7. The replacement system board may not have the latest firmware.

Power supply unit (PSU)

Located on the rear panel of the server power supply is a standard autoranging 750 W or 500 W non-hot-plug PSU.

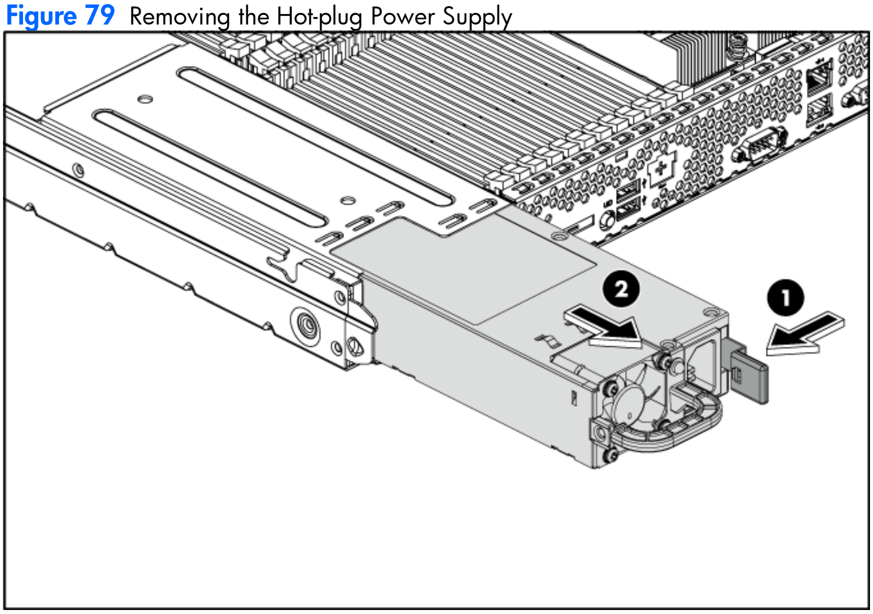
Figure 78 Hot-plug Power Supply Unit



To remove the hot-plug power supply:

1. Press the purple tab.
2. Pull the hot-plug power supply out of the power supply bay

Figure 79 Removing the Hot-plug Power Supply



To reinstall the hot-plug power supply:

1. Align the hot-plug power supply cage connector with the open power supply bay and slide the power supply into the chassis.
2. Push it in until the locking tab is clicked.

Figure 80 Reinstalling the Hot-plug Power Supply

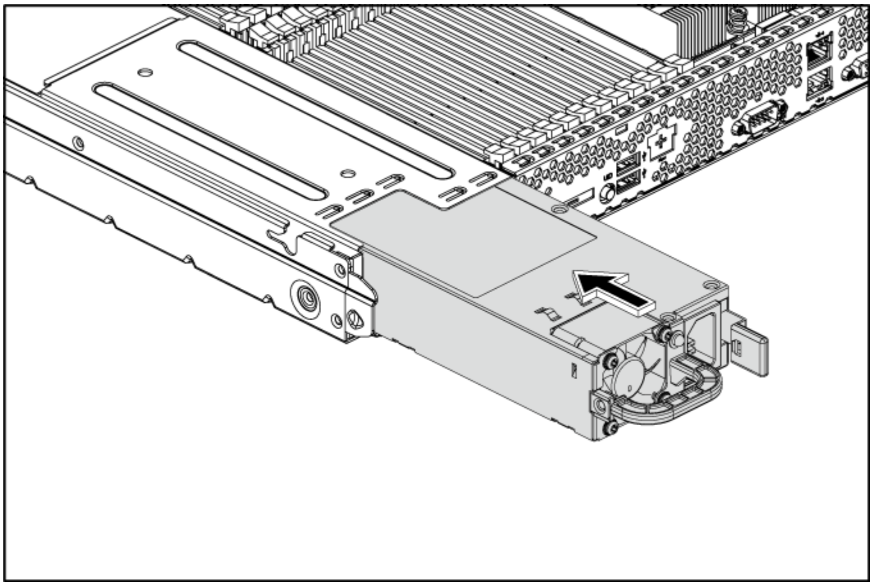
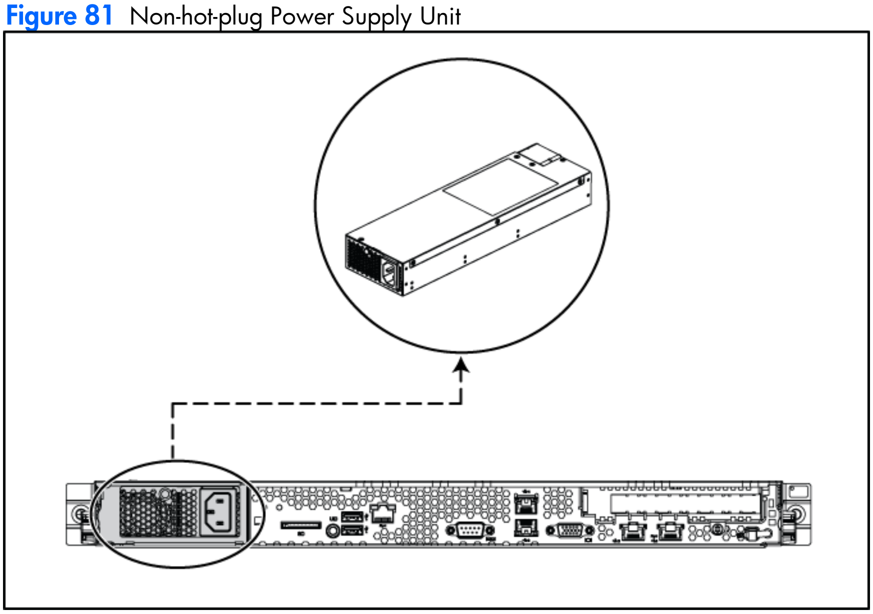


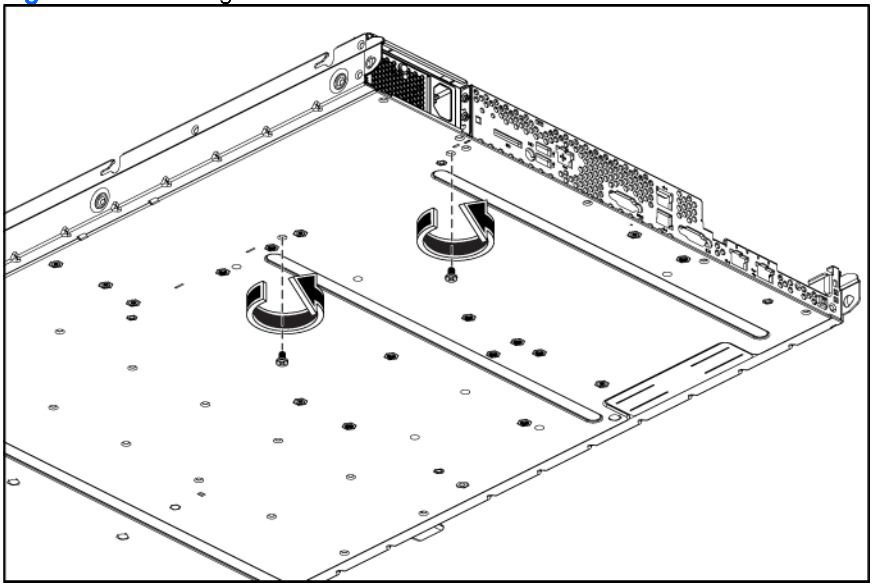
Figure 81 Non-hot-plug Power Supply Unit



To remove the non-hot-plug power supply:

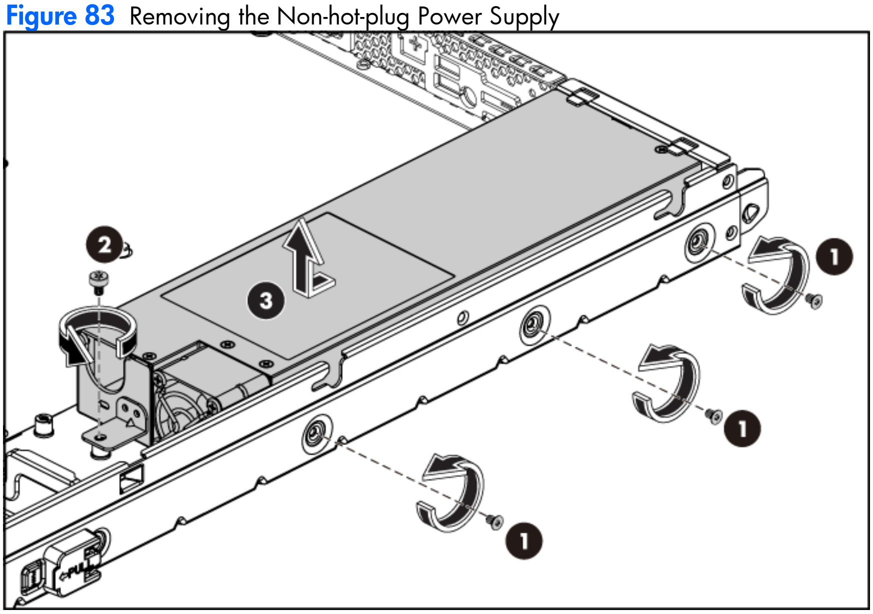
1. Loosen the two screws that secure the power supply, which are located beneath the chassis.

Figure 82 Loosening the Two Screws beneath the Chassis



2. Loosen the screws that secure the power supply to the chassis.
3. Pull and lift the power supply out of the chassis.

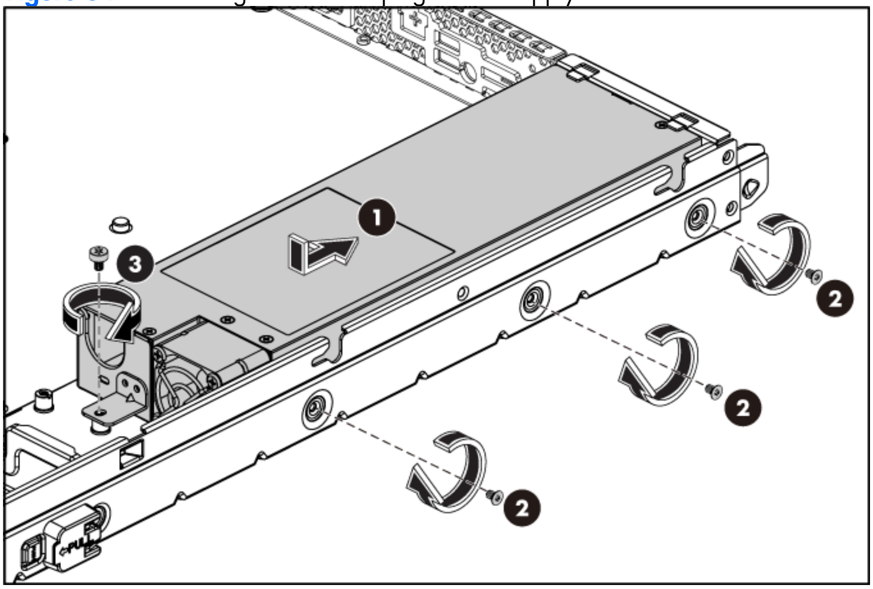
Figure 83 Removing the Non-hot-plug Power Supply



To reinstall the non-hot-plug power supply:

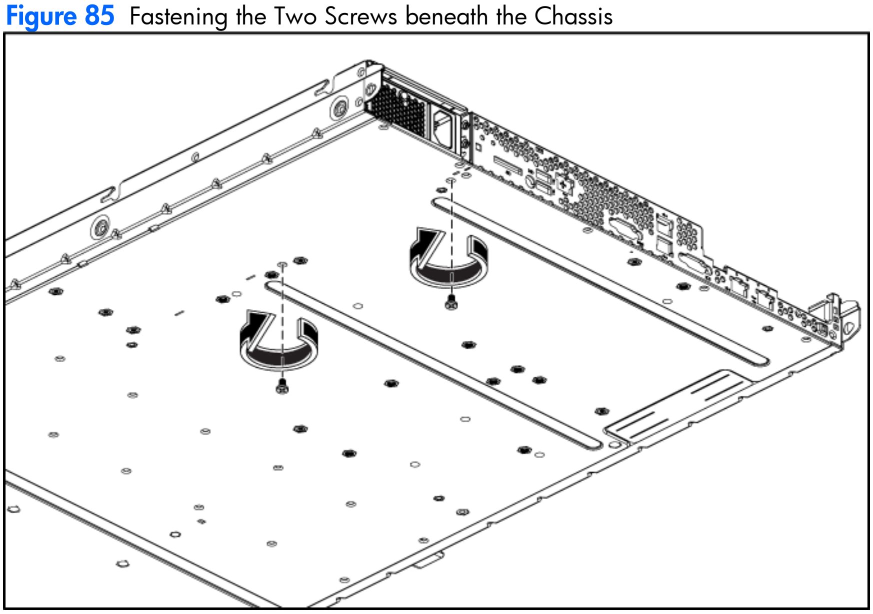
1. Locate and push the power supply to the proper place in the chassis.
2. Fasten the power supply to the chassis using the screws as shown in the figure below.

Figure 84 Reinstalling the Non-hot-plug Power Supply



3. Fasten the two screws which are located beneath the chassis to secure the power supply

Figure 85 Fastening the Two Screws beneath the Chassis



⚠ **WARNING:** Take note of the following reminders to reduce the risk of personal injury from electric shock hazards and/or damage to the equipment.

- Installation of power supply units should be referred to individuals who are qualified to service server systems and are trained to deal with equipment capability of generating hazardous energy levels.
- DO **not** open the power supply unit. There are no serviceable parts inside it.

System fan

The server can support up to seven system fans located on the center wall of the chassis. When the server is installed with one processor, the system fans should be installed in the 2nd, 4th, 5th and 6th system fan locations. When the server is installed with two processors, the redundant fan functions are supported by the system fan 1, system fan 3, and system fan 7 when installed.

Figure 86 System Fan Connections for One Processor Configuration

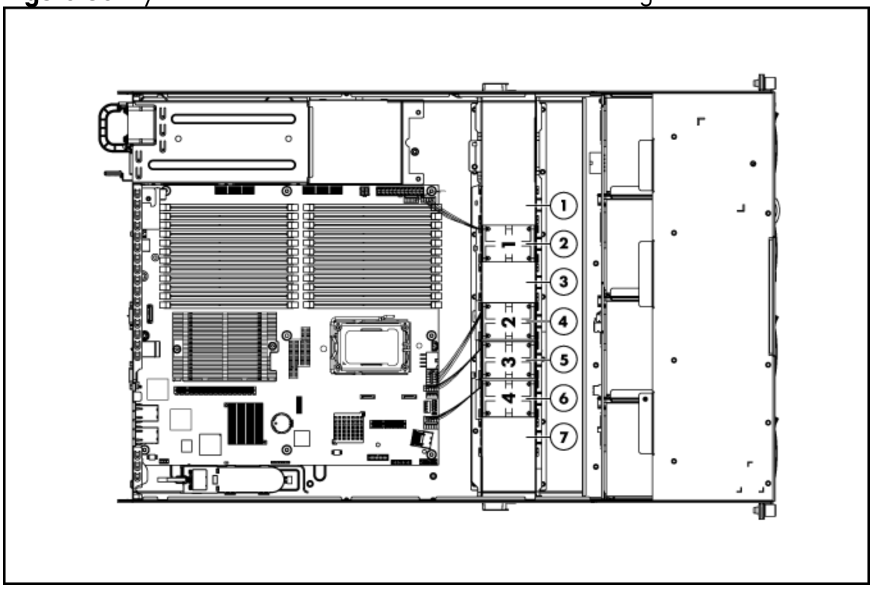
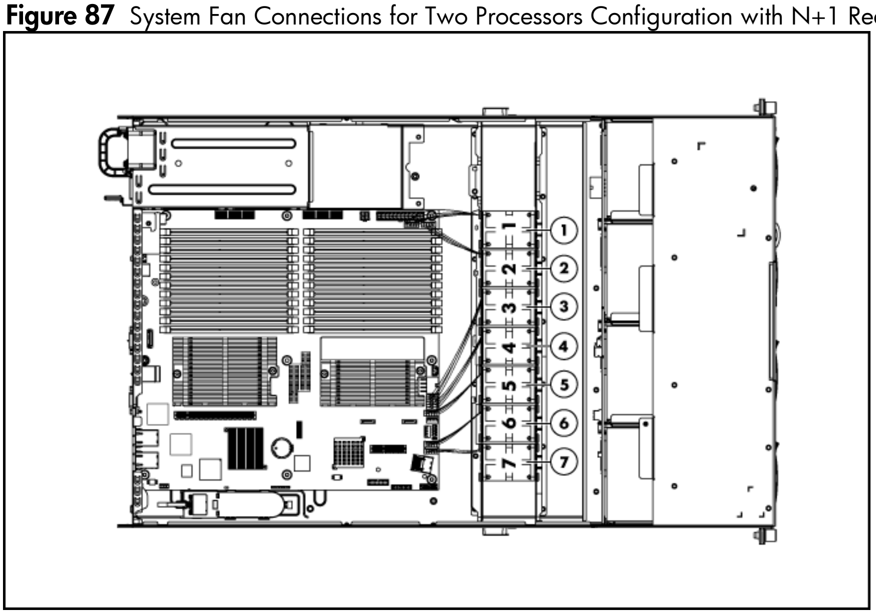


Figure 87 System Fan Connections for Two Processors Configuration with N+1 Redundancy Fan



Device number	Connector
System fan 1	J61 on the system board
System fan 2	J62 on the system board
System fan 3	J63 on the system board
System fan 4	J64 on the system board

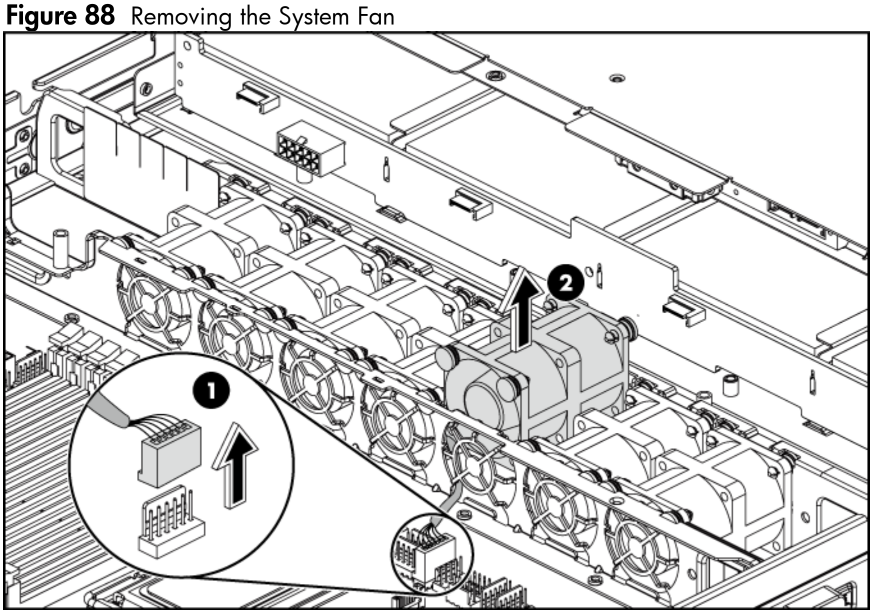
Device number	Connector
System fan 5	J65 on the system board
System fan 6	J66 on the system board
System fan 7	J69 on the system board

A new system fan can be installed to allow the server to operate properly in case a default system fan becomes defective.

To remove the system fan:

1. Power down the server.
2. Disconnect the power cord(s).
3. Unlock the server if necessary and remove the top cover as described in the section "System cover".
4. Disconnect the system fan cable from its corresponding board connector.
5. Release the fan cable from the cable clip securing it to the chassis partition wall.
6. Lift the system fan away from the chassis.

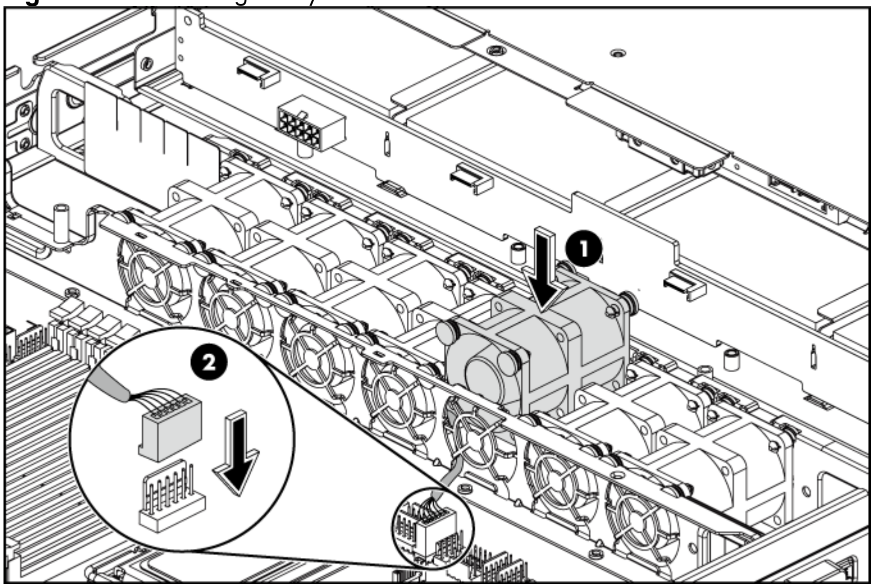
Figure 88 Removing the System Fan



To reinstall the system fan:

1. Put the system fan cable through the system fan cage.
2. Hold the system fan and press the system fan into the system fan bracket.
3. Connect the system fan cable to its corresponding board connector.

Figure 89 Reinstalling the System Fan



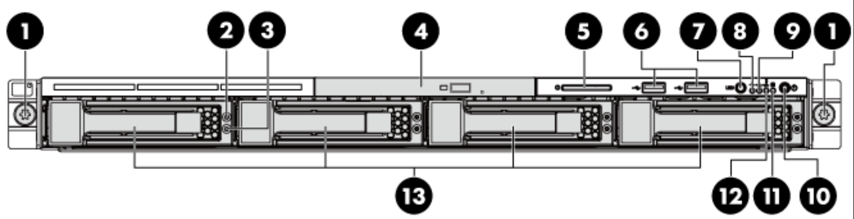
Connectors, switches, and LEDs

This chapter contains illustrations and tables identifying and describing the connectors, jumpers, switch, buttons, and LED indicators located on the front panel, rear panel, system board and hard drives of the HP ProLiant DL165 G7 server.

Connectors and components

Front panel components

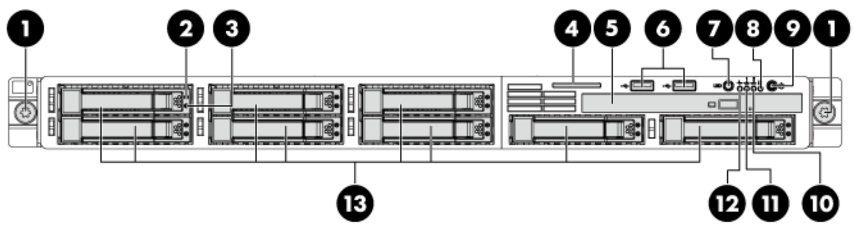
Figure 90 Front Panel Components / 4 3.5" LFF HDD Hot-plug Model



Item	Description
1	Thumbscrews for rack mounting
2	Drive online/error LED
3	Drive activity LED
4	Optical disc drive (optional)
5	Serial number pull tab
6	Front panel USB 2.0 port 1/2
7	Front UID LED/switch
8	System health LED
9	NIC 1/2 activity LED
10	Power LED/switch
11	Hard drive activity LED

Item	Description
12	NIC 3/4 activity LED
13	Hard disk drive (HDD) bays

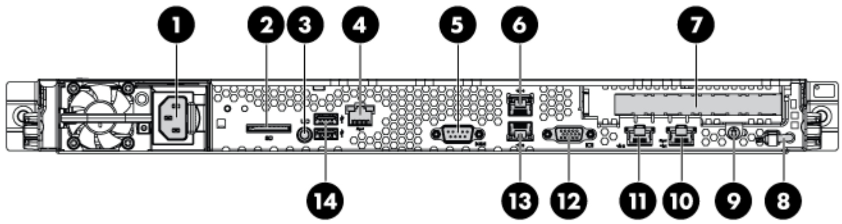
Figure 91 Front Panel Components / 8 2.5” SFF Hot-plug HDD Model



Item	Description
1	Thumbscrews for rack mounting
2	Drive online/error LED
3	Drive activity LED
4	Serial number pull tab
5	Optical disc drive
6	Front panel USB 2.0 port 1/2
7	Front UID LED/switch
8	Hard drive activity LED
9	Power LED/switch
10	NIC 3/4 activity LED
11	NIC 1/2 activity LED
12	System health LED
13	Hard disk drive (HDD) bays

Rear panel components

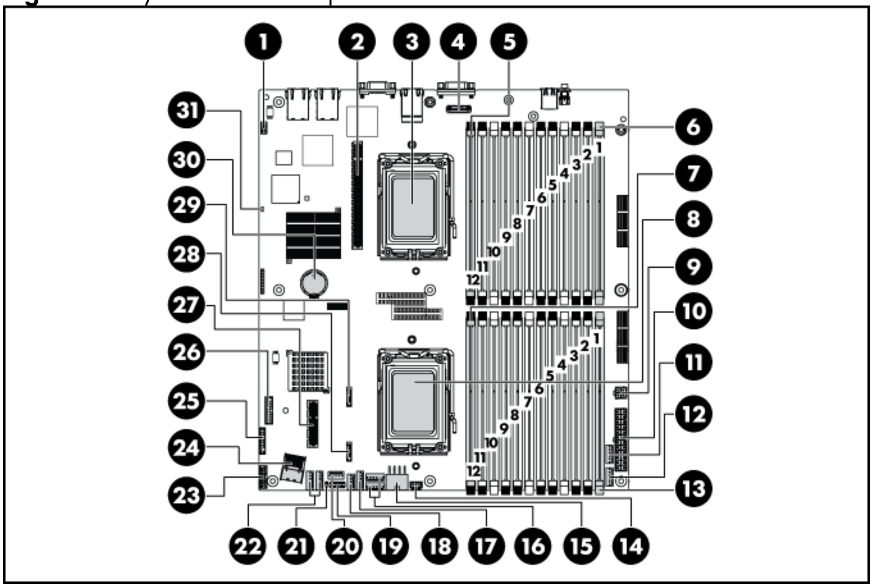
Figure 92 Rear Panel Components



Item	Description
1	Power supply cable socket
2	SD card reader port (optional)
3	Rear UID LED/switch
4	Mgmt port (optional)
5	Serial port
6	GbE LAN port for NIC 4
7	Full-height/full-length PCI expansion card slot cover
8	T-10/T-15 wrench
9	Screw for PCI cage
10	GbE LAN port for NIC 1
11	GbE LAN port for NIC 2
12	VGA port
13	GbE LAN port for NIC 3
14	Rear panel USB 2.0 port 0/1

System board components

Figure 93 System Board Components



Item	Designator	Description
1	J1	System maintenance jumper
2	J301	PCIe x16 slot
3	CPU1	Processor 1
4	J11	Mgmt card connector
5	J110	DIMM slot 12 for processor 1
6	J103	DIMM slot 1 for processor 1
7	J210	DIMM slot 12 for processor 2
8	CPU2	Processor 2
9	J54	4-pin power connector
10	J52	24-pin power connector
11	J61	Fan connector 1
12	J62	Fan connector 2
13	J203	DIMM slot 1 for processor 2
14	J65	Backplane I^2C connector
15	J53	8-pin power connector
16	J63, J64	Fan connectors 3/4
17	J65	Fan connector 5
18	J49	Internal USB 2.0 port
19	J81	SD card USB 2.0 port
20	J8	Front panel USB 2.0 port

Item	Designator	Description
21	J100	SAS LED connector
22	J36, J69	Fan connectors 6/7
23	J13	Mini-SAS connector for SATA
24	J55	Power backplane control connector
25	J98	Front panel header
26	J56	TPM connector
27	J78	PCIe x4 slot
28	SATA	ODD 2 SATA connector
29	SATA	ODD 1 SATA connector
30	BH1	3 V CMOS battery (CR2032)
31	J6	NMI Jumper

Jumper

The system board contains a system maintenance jumper (J1). **Table 12** describes the jumper settings.

Table 12 System Maintenance Jumper Setting (J1)

Jumper	Status (default=off)
A	Clear BMC password
B	Recovery BMC
C	Recovery BIOS
D	Clear CMOS

LED indicators

This section contains illustration and descriptions of internal and external status LED indicators located on the:

- Front panel
- Optical drive
- Hard drive
- Rear panel
- System board

These LED indicators aid in problem diagnosis by indicating the status of system components and operations of the server.

Front panel LED indicators

The front panel LED indicators allow constant monitoring of basic system functions while the server is operating.

Figure 94 Front Panel LED Indicators

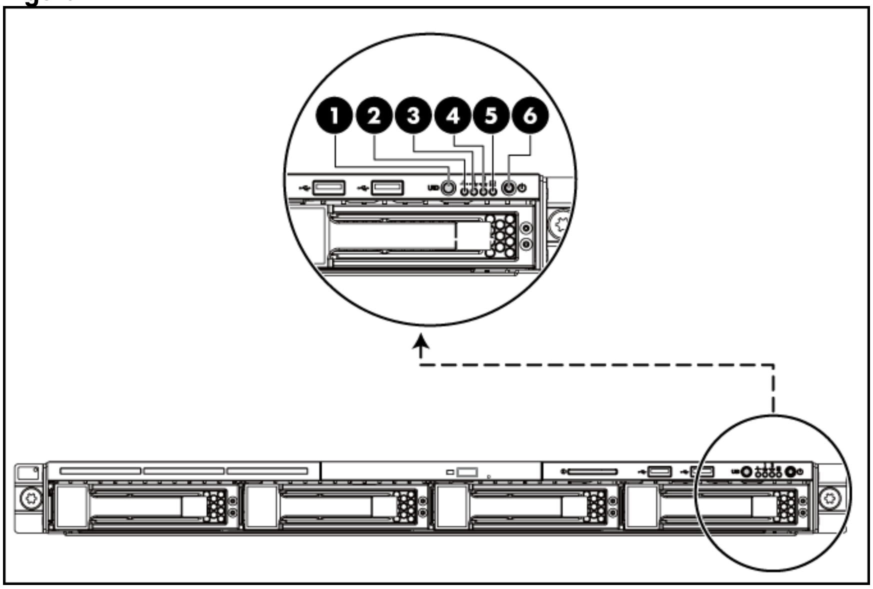


Table 13 Front Panel LED Indicator Status

Item	LED indicator	Status	Description
1	Front UID LED/switch	Steady blue	Identification.
		Flashing blue	The system is being remotely managed.
		Off	No identification.
2	System health LED	Steady green	System is powering on and normal.
		Flashing red	System is powering on or off and critical.
		Flashing amber	System is powering on or off and degraded.
		Off	System is powering off and normal.
3	NIC 1 activity LED	Steady green	Linked to the network.
		Flashing green	Linked and activity on the network.
		Off	No connection.
4	NIC 2 activity LED	Steady green	Linked to the network.
		Flashing green	Linked and activity on the network.
		Off	No connection.
5	Hard drive activity LED	Flashing green	Hard drive activity.
		Off	No hard drive activity.
6	Power LED/switch	Steady green	The system has AC power and is turned on.
		Flashing green	The system is requesting power-on.

Table 13 Front Panel LED Indicator Status

Item	LED indicator	Status	Description
		Steady amber	The system has AC power but in standby mode or denies power-on.
		Off	No AC power to the system.

Optical drive activity LED indicator

The optical drive has an activity indicator that indicates when the drive is reading media.

Figure 95 Optical drive activity LED indicator

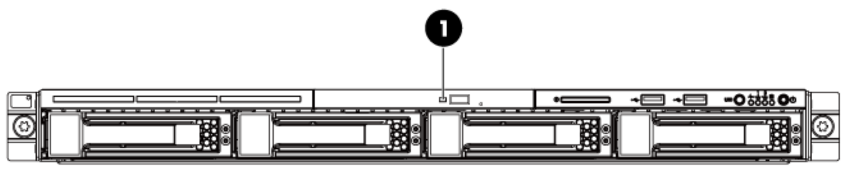


Table 14 Optical Drive Activity LED Indicator Status

Item	LED indicator	Status	Description
1	Optical drive activity LED indicator	Flashing green	Ongoing drive activity
		Off	No drive activity

Hard Drive LED indicators

The status of hard drives installed in the server is indicated by the online LED indicator located on the HDD.

Figure 96 Hard Drive LED Indicator

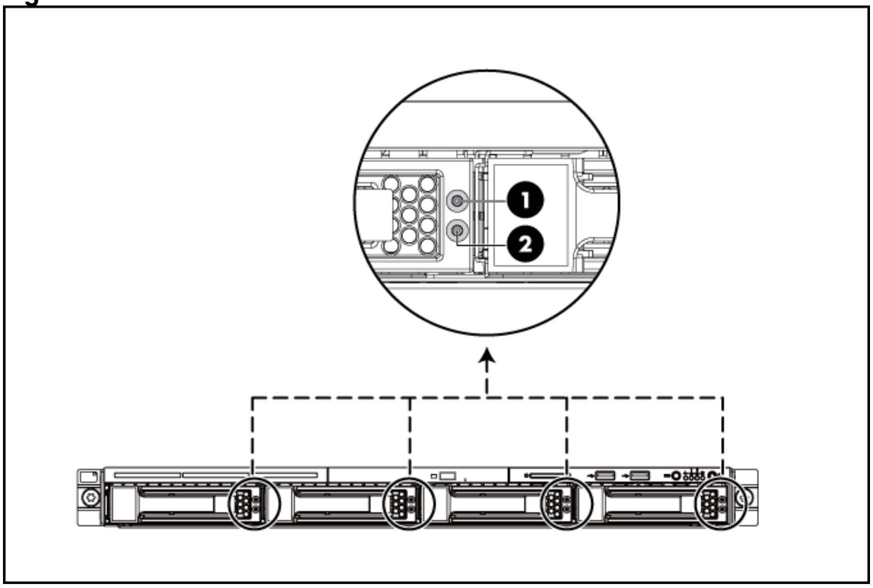


Table 15 Hard Drive LED Indicator Status

Item	LED indicator	Status	Description
1	Drive online/error LED indicator	Steady blue	The drive is located
		Steady orange	The drive is in a failed state.
		Off	The drive is not in a failed state.
2	Drive activity LED indicator	Flashing green	The drive is in an activity state.
		Off	The drive is not in an activity state.

Rear panel LED indicators

The LAN port on the rear panel has two LED indicators that allow monitoring of network activity.

Figure 97 LAN LED Indicators Location

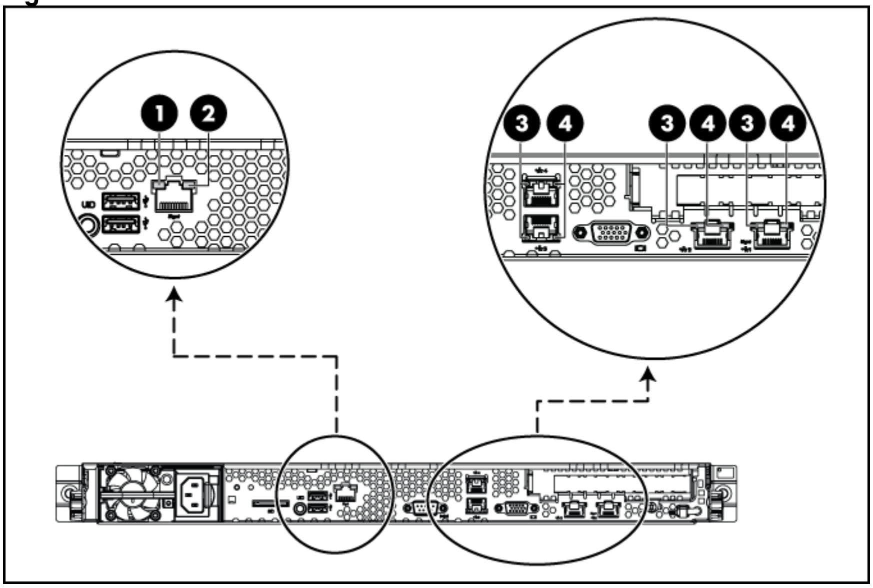


Table 16 LAN LED Indicator Status

Item	Component	Status	Description
1	Pilot 2 NIC activity LED indicator	Flashing amber	LAN is active.
2	Pilot 2 NIC link LED indicator	Steady green	Linking at 100 Mbps speed.
		Off	No connection or linking at 10 Mbps speed.
3	NIC speed LED indicator (left)	Steady green	Linking at 10 Mbps / 100 Mbps / 1G /10 G.
		Off	No connection or linking at 10 Mbps speed.
4	NIC activity LED indicator (right)	Flashing green	Linked and activity on the network.
		Steady green	Linked to the network.
		Off	No network activity.

System board LED indicator

Each system board contains one LED indicator for use during troubleshooting operations.

Figure 98 System Board LED Indicator

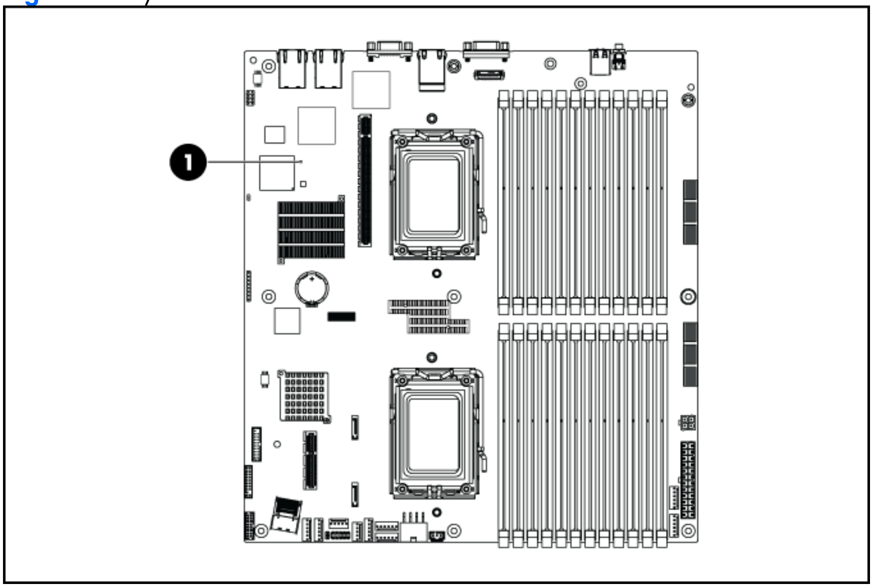


Table 17 System Board LED Indicator Status

Components	**Status**	**Descriptions**
BMC activity LED indicator	Steady green	BMC is power on and in initialization process
	Flashing green	BMC activity
	Off	AC is Off

Diagnostic tools and setup utilities

This chapter provides an overview of the Power-On Self-Test (POST), the POST error messages, and BIOS, SAS and SATA setup utilities.

BIOS software

The server uses BIOS to boot up the system. BIOS software is a ROM-based firmware that allows reliability, manageability, and connectivity for the server platforms. This software contains a set of programs permanently stored in an EEPROM chipset located on the system board. These programs assist in managing, initializing, and testing the hardware devices installed on the computer.

BIOS software allows you to:

- Perform configuration from the BIOS Setup Utility

  Using the Setup Utility, you can install, configure, and optimize the hardware devices on the system board. In addition, you can set various features such as serial console redirection, PXE boot, and much more.
- Initialize hardware at boot up using POST routines

  During power-on or warm reset, the BIOS perform POST routines to test system components, allocate resource for various hardware devices, and prepare the system to boot to various operating systems.

BIOS Setup Utility

The HP server BIOS Setup Utility is used to configure five primary menu selections:

- Main
- Advanced
- Boot
- Security
- Exit

Accessing the BIOS Setup Utility

1. Turn on the monitor and server.
2. If the server is already turned on, save your data and exit all open applications, then restart the server.
3. When the HP logo is displayed during POST, press F10 into BIOS Setup Utility. If you fail to press F10 before POST is completed, you will need to restart the server.
4. The first page displayed is the Main menu showing the Setup Utility menu bar. Use the "←" or "←" key to move between selections on the menu bar. Use the <Enter> key to select items within a menu.

Navigating through the Setup Utility

Use the keys listed in the legend bar on the right of the Setup screen to navigate through the various menu and submenu screens of the Setup Utility. **Table 18** lists these legend keys and their respective functions.

Table 18 Setup Utility Navigation Keys

Key	Function
"←" or "←"	Select different screens.
Enter	Select items in each menu.
Enter, Tab, or Shift-Tab	Select a field value or display a submenu screen. Display more options for items marked with ►.
Esc	Exit the CMOS Setup menu.
<+>, <–>	Configure the system time or change field.
F1	To bring up the General Help window. The General Help window describes other Setup navigation keys that are not displayed on the legend bar.
F10	To save changes and exit the CMOS Setup Utility.

Setup Utility menu bar

The BIOS Setup Utility provides a menu bar with the menu selections. The menu bar choices are described in the topics below.

Main menu

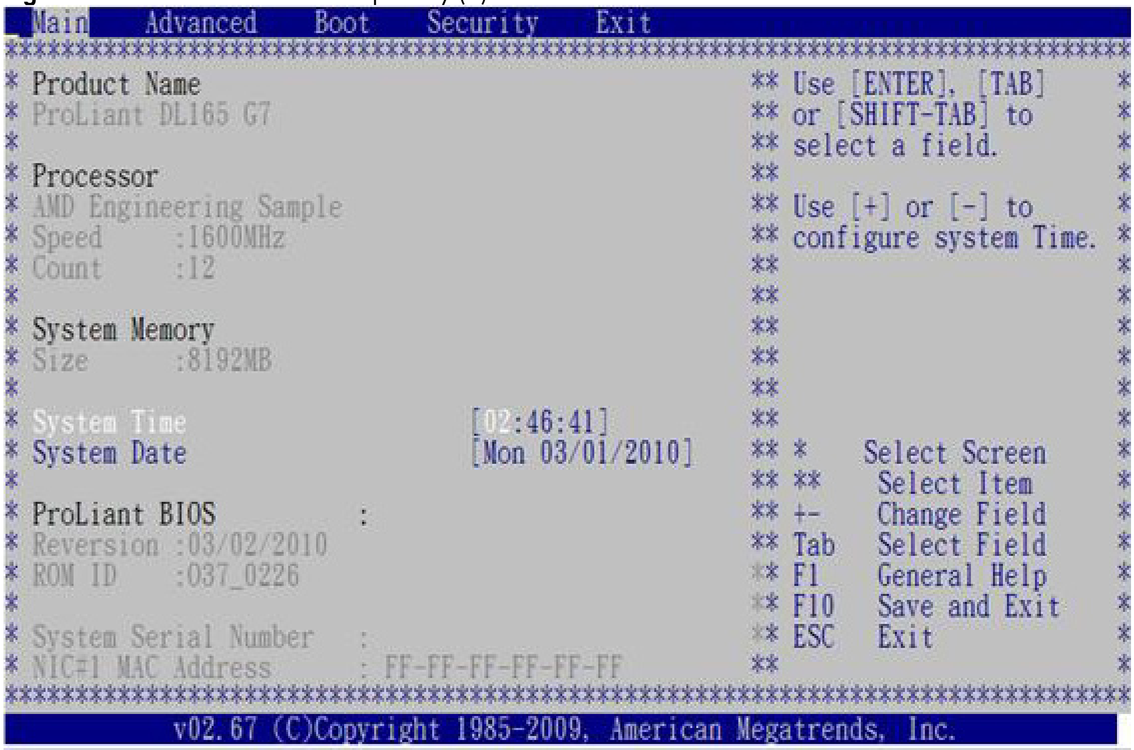


Figure 99 Main Menu of BIOS Setup Utility (1)

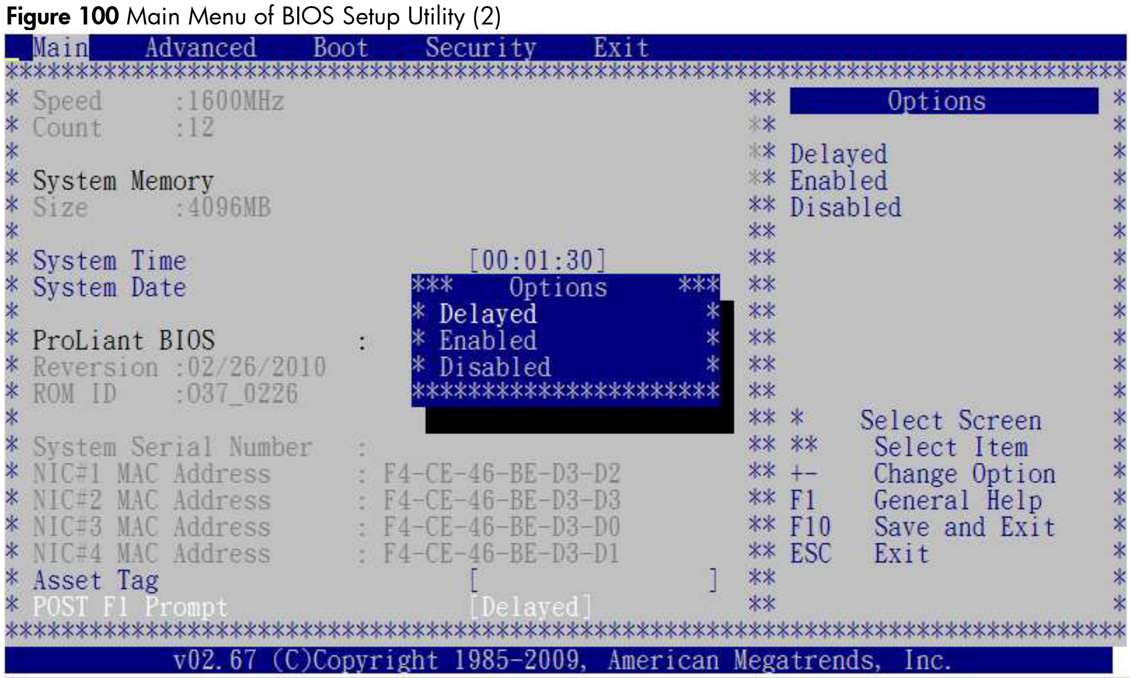


Figure 100 Main Menu of BIOS Setup Utility (2)

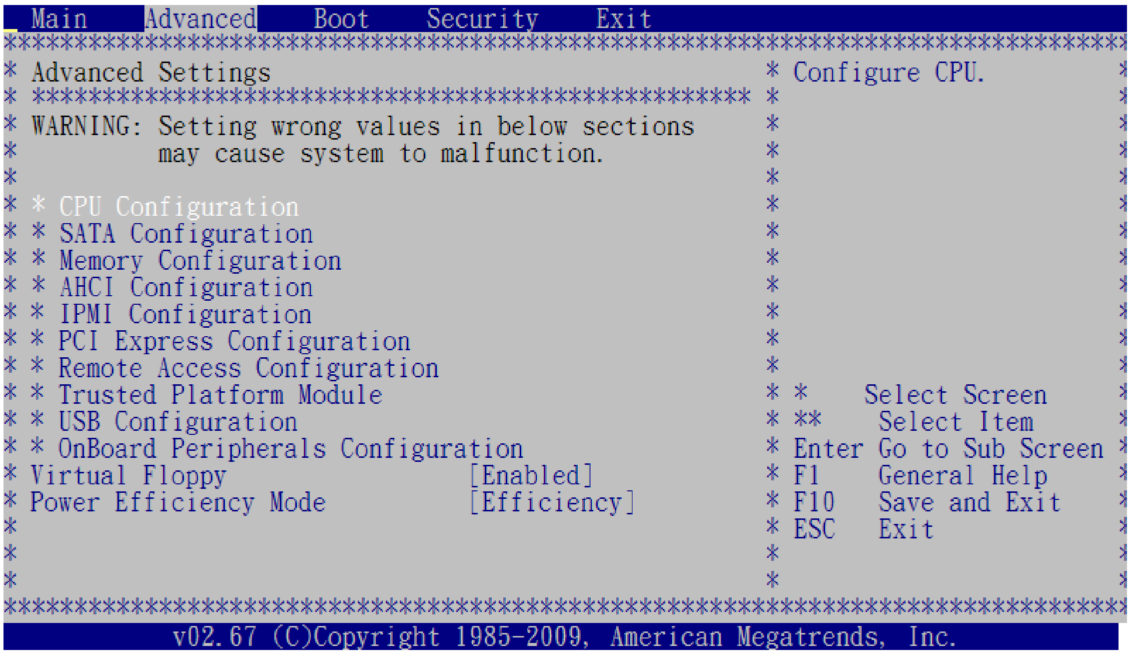
Use this menu to configure the following items:

- View product name.
- View processor information and system memory size.
- Set system time and date.
- View BIOS build date and version.

- View system serial number.
- View NIC MAC addresses.
- Set asset tag.
- Configure POST F1 prompt.

Advanced menu

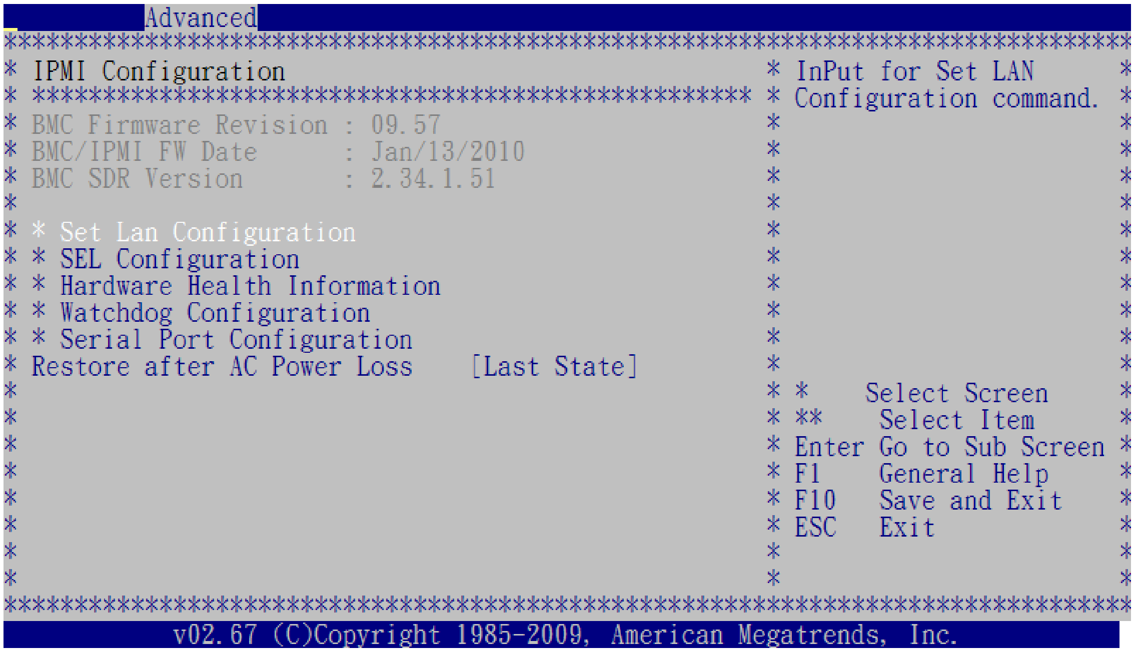
Figure 101 Advanced Menu of the BIOS Setup Utility



WARNING: Incorrect settings may cause the server to malfunction. To correct the settings, press the **F9** key to restore the default settings.

- **CPU Configuration**—Configure CPU settings.
- **SATA Configuration**—Configure the SATA device(s).
- **Memory Configuration**—Configure the memory settings.
- **AHCI Configuration**—Configure the AHCI settings.
- **IPMI Configuration**—Configure IPMI 2.0 settings.
- **PCI Express Configuration**—Configure PCI Express settings.
- **Remote Access Configuration**—Configure the remote access settings.
- **Trusted Platform Module**—Configure trusted platform module.
- **USB Configuration**—Configure USB settings.
- **OnBoard Peripherals Configuration**—Configure the settings of onboard peripherals.
- **Virtual Floppy**—Disable/Enable virtual floppy. Allow users to load SW RAID driver without pressing F6 key during MS W2K3 OS installation when Virtual Floppy option is enabled.
- **Power Efficiency Mode**—Select the power efficiency mode.

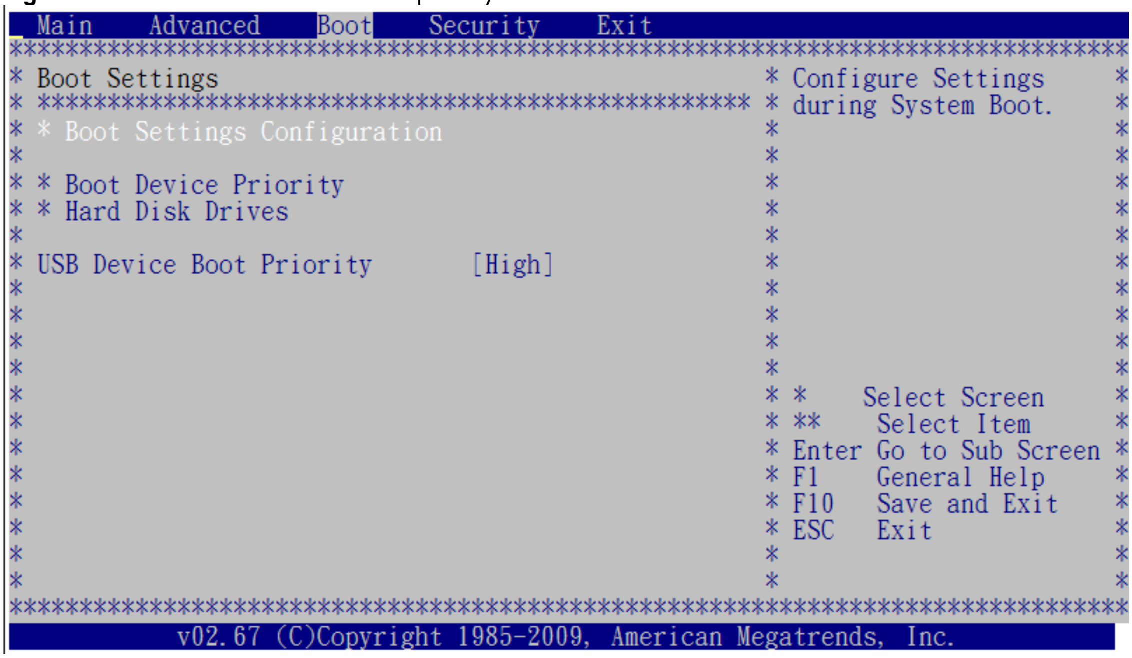
Figure 102 IPMI Submenu of the BIOS Setup Utility



- **BMC Firmware Revision**—Display the version of the BMC hardware and firmware.
- **BMC/IPMI FW Date**—View BMC/IPMI FW date.
- **BMC SDR Version**—View BMC SDR version.
- **Set LAN Configuration**—Set LAN settings.
- **SEL Configuration**—Display BMC event log.
- **Hardware Health Information**—Set temperature and fan rotation rate.
- **Watchdog Configuration**—Configure watch dog timer status.
- **Serial Port Configuration**—Configure serial port connection settings.
- **Restore after AC Power Loss**—Use this screen to restore the AC power setting.

Boot menu

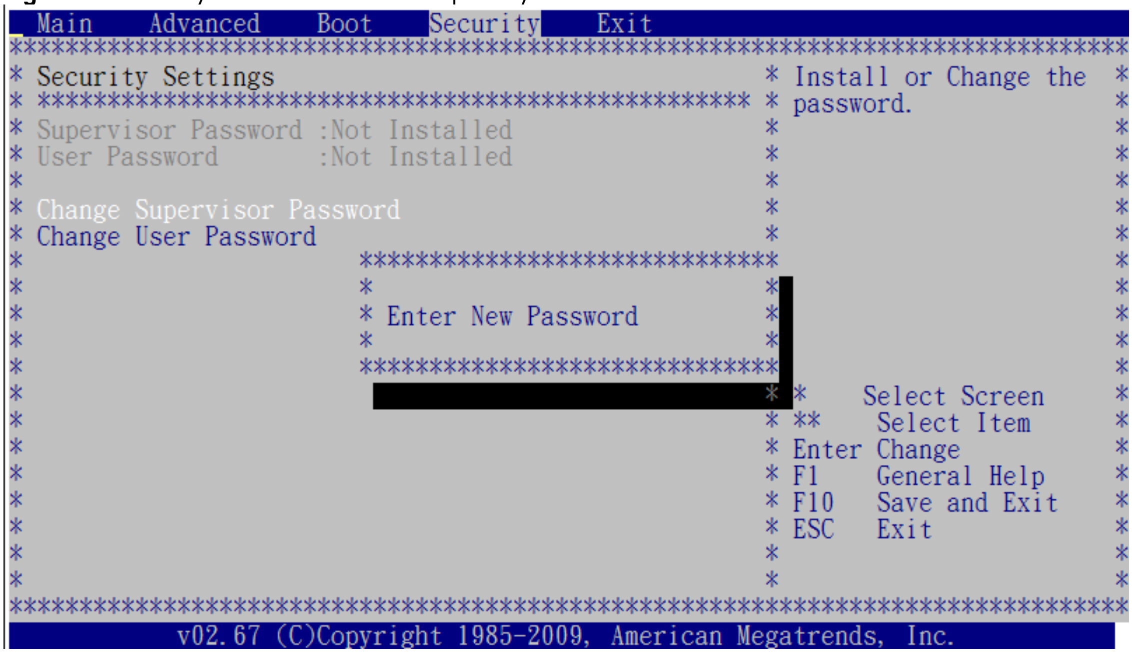
Figure 103 Boot Menu of the BIOS Setup Utility



- **Boot Settings Configuration**—Configure settings during system boot.
- **Boot Device Priority**—Use this screen to specify the order in which the system checks for a boot device.
- **Hard Disk Drives**— View the hard disk drives in the system.
- **USB Drive Boot Priority**—Configure priority settings for USB devices. Users can configure the BIOS to avoid attempting to boot non-bootable USB devices that are left plugged into the server during POST. The options are **High** (default) and **Low**.

Security menu

Figure 104 Security Menu of the BIOS Setup Utility

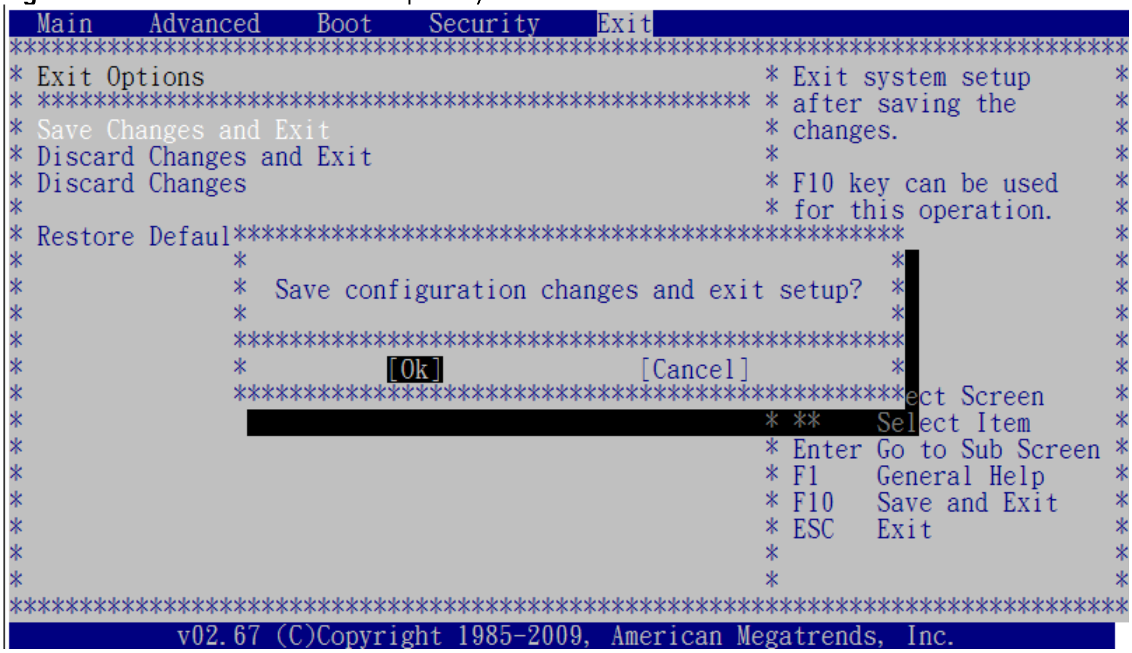


Use this menu to configure the following items:

- **Supervisor Password**—Indicate if a supervisor password has been installed to the system.
- **User Password**—Indicate if a user password has been installed to the system.
- **Change Supervisor Password**—Modify or change your supervisor password.
- **Change User Password**—Modify or change the user password.

Exit menu

Figure 105 Exit Menu of the BIOS Setup Utility



Use this menu to save changes or discard changes. When you save and exit, the server reboots.

- **Save Changes and Exit**—Save the changes you have made and exit the BIOS Setup Utility.
- **Discard Changes and Exit**—Exit the BIOS Setup Utility without saving the changes you have made.
- **Discard Changes**—Discard (cancel) any changes you have made. **F10** can be used for this operation. You will remain in the Setup Utility.
- **Restore Default Settings**—Load optimal default values for all the setup questions

BIOS update

Please make sure your USB key drive diskette is bootable before unzip.

Please unzip factory or user into the root directory of USB key drive diskette.

Flash system BIOS steps:

1. Power on the system with USB key drive diskette.
2. User Tool - Execute the ROMPAQ.EXE
3. Follow the on-screen instruction to upgrade the system BIOS.

Power-On Self-Test (POST)

Before you can use a server, all devices must be tested and initialized, and the operating system must be bootstrapped to the memory. This is referred to as Power–On Self-Test or POST. POST is a series of diagnostic tests that checks firmware and hardware components on the system to ensure that the server is properly functioning. This diagnostic function automatically runs each time the server is powered on.

These diagnostics, which reside in the BIOS ROM, isolate the server-related logic failures and indicate the board or component that you need to replace, as indicated by the error messages. Most server hardware failures will be accurately isolated during POST. The number of tests displayed depends on the configuration of the server.

During POST you can:

- Press **F10** to access the Setup Utility.

POST error indicators

When POST detects a system failure, it displays a POST error message.

POST related troubleshooting

Perform the following procedures when POST fails to run, displays error messages.

If the POST failure is during a routine boot up, check the following:

- All external cables and power cables should be firmly plugged in.
- The power outlet to the server should be connected and works correctly.
- The server and monitor are both turned on. The bicolour status LED indicator on the front panel must be lit up green.
- The monitor's contrast and brightness settings are correct.
- All internal cables are properly connected and all boards firmly seated.
- The processor is fully seated in its socket on the system board.
- The heat sink assembly is properly installed on top of the processor.
- All memory modules are properly installed.
- If you have installed a PCI accessory board, verify that the board is firmly seated and any jumpers on the board are properly set. Refer to the documentation provided with the accessory board.
- All internal cabling and connections are in their proper order.
- If you have changed the jumpers on the system board, verify that each is properly set.

Physical and operating specifications

This chapter provides physical and operating specifications for the HP ProLiant DL165 G7 server. Specifications include:

System unit

Table 19 Hardware Specifications

Item	Components
Processor socket	AMD G34 1944-pin socket
Processor	2P AMD G34 Magny-Cours
Chipset	ATI SR5670/ATI SP5100
Hardware monitoring device	Embedded in ServerEngines Pilot 2 management controller
Gigabit ethernet controller	• Intel 82576 GbE controller for NIC • LO100i sideband support
Onboard storage controller	ATI SP5100
DVD & Floppy interface	Optional DVD (SATA)
Embedded video controller	ServerEngines Pilot 2 management controller
I/O subsystem	• One PCIe x16 links with x16 • One PCIe x4 links with x8 slot
Memory	Twenty four DDR3 RDIMM/UDIMM slots, up to 192 GB
Default media storage	• Four bays LFF hot-plug HDD cage for 3.5” SAS/SATA drives • Eight bays SFF hot-plug HDD cage for 2.5” SAS drives
Optical media storage	• One slim optical drive bay for DVD-ROM drive on the front
I/O ports	USB 2.0 ports (two rear USB ports, one internal USB port, two front USB ports), video port, serial port and GbE port and mgmt port.

Table 19 Hardware Specifications

Item	Components
Status LED indicators Front panel	 • System Health LED • NIC 1/2 activity LED • Power Switch/LED • Hard drive activity LED indicator • UID Switch/LED
Rear panel	• Rear UID LED/switch • NIC link LED • NIC activity LED
System board	• BMC Activity LED
Power supply unit	500 W non-hot-plug, power supply 750 W hot-plug, power supply
Thermal solution	Seven system fans

Table 20 Physical Dimensions

Item	Description
System board platform	EATX (Extended Advanced Technology Extended)
System board dimension	304.8 mm x 330.2 mm (12 in x 13 in)
Server dimensions (H x W x D) Rack	43 mm x 448 mm x 713 mm (1.69 in. x 17.64 in. x 28.07 in.)
Server weight	Basic configuration (excludes monitor): 15 ± 2kg

Table 21 Environmental Specifications

Item	Description
Temperature: Operating Non-operating Storage Wet-bulb temperature	 +10°C to +35°C (+50°F to +95°F) -30°C to 60°C (-22°F to 140°F) -30°C to 60°C (-22°F to 140°F) 38.7°C (101.7°F)
Relative humidity: Operating Non-operating Storage	 5% to 95% (non-condensing) 5% to 95% 5% to 95%

Table 21 Environmental Specifications

Item	Description
Altitude: Operating Non-operating	 0 to 3049 m (0 to 10,000 ft) 0 to 9146 m (0 to 30,000 ft)
Thermal output (maximum operating) Acoustic emissions Light-load configuration	700 W/hr LWad: 6.08 Bels (operating at room temperature) LWad: 6.03 Bels (Idle at room temperature)

Table 22 Power Supply Specifications / 500 W Non-hot-plug

Item	Description
Dimensions (H x W x D)	40.00 mm x 86.00 mm x 280.00 mm (1.57 in x 3.39 in x 11.02 in)
Weight (approximate)	1.36kg (3.00 lb)
Input requirements: Rated input voltage Normal line voltage	 100 VAC to 240 VAC 100 VAC to 127 VAC//200 VAC to 240 VAC
Line frequency	47–63 Hz
Rated input current	4.99 ARMS max @ 115 VAC 2.46 ARMS max @ 230 VAC
BTU rating	N/A
Power supply output power: Rated steady state power Maximum peak power	 500 W N/A
Temperature range: Operating Shipping	 +5°C to +50°C –40°C to +85°C
Relative humidity: Operating Non-operating	 5% to 95% relative humidity, non-condensing 5% to 95% relative humidity, non-condensing

Table 23 Power Supply Specifications / 750 W Hot-plug

Item	Description
Dimensions (H x W x D)	38.48 mm x 86.36 mm x 190.5 mm (1.52 in x 3.4 in x 7.5 in)
Weight (approximate)	1.36 kg (3.00 lb)

Table 23 Power Supply Specifications / 750 W Hot-plug

Item	Description
Input requirements: Rated input voltage Normal line voltage	 90 VAC to 264 VAC 90 VAC to 110 VAC/108 VAC to 132 VAC/180 VAC to 264 VAC
Line frequency	47–63 Hz
Rated input current	7.4 ARMS max @ 115 VAC 3.6 ARMS max @ 230 VAC
BTU rating	N/A
Power supply output power: Rated steady state power Maximum peak power	 750 W N/A
Temperature range: Operating Shipping	 +5°C to +50°C –40°C to +85°C
Relative humidity: Operating Non-operating	 5% to 95% relative humidity, non-condensing 5% to 95% relative humidity, non-condensing

Index